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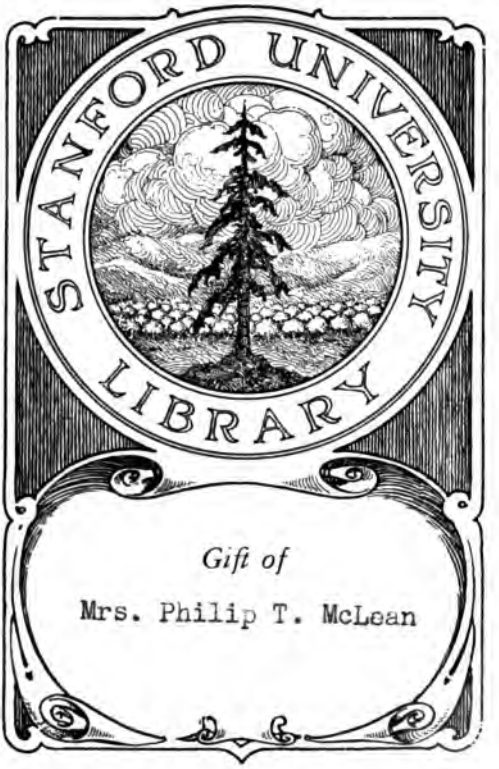

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GENERAL INTRODUCTION

WE believe that every intelligent person who loves music wishes to know more of the history of music—how music developed; about the great composers and their works; hymns that have helped; songs that have cheered and inspired; performers who have stirred the world; the great operas and oratorios, and even the essentials of composition and musical theory. These and many other related subjects, constituting the literature of music, are fully treated in the volumes comprising the "University Musical Encyclopedia." These volumes form a complete encyclopedia and history of music and musicians. They comprise a library covering the whole field of musical literature. The material has been written by more than forty of the greatest musicians, critics, and experts on musical subjects in this country and Europe. It is accurate and authoritative.

This work has been specially prepared for music-teachers and all intelligent lovers of music. It has been made pleasing in style, interesting, readable, and anecdotal. It is not merely a collection of material for occasional reference, but is designed for enjoyable reading. Teachers and students should not forget the

importance and value of a broad course of reading and study of musical subjects, such as are treated in this encyclopedia. Such a course of reading adds to the efficiency of the teacher or public performer. The true lover of music should be well informed regarding musical subjects and musical literature. The ordinary encyclopedia of music is dry and uninteresting. The ordinary encyclopedia of music is full of information, but is not practical. This encyclopedia is interesting, practical, and helpful. It contains practical articles on singing, piano-playing, and almost every other branch of musical culture, written by men and women who know how to write attractively.

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A HISTORY OF MUSIC: PRIMITIVE, ANCIENT, MEDIEVAL, AND MODERN.—This division gives a history of foreign music from the earliest times to the year 1910. It is a complete history of the rise and development of music. Among the eminent authorities by whom it has been written are Sir C. Hubert H. Parry and John F. Rowbotham. The history of primitive, ancient, medieval, and modern music was never more clearly or pleasingly told.

A HISTORY OF MUSIC: AMERICAN.—This division contains an account of the beginning and rise of musical culture in America and its development to the present day. There are important chapters on "American Hymns and Hymn-writers," "Nationality in Music," "American Composers," "American Songs and Song-writers," etc. This section also includes more than

twenty articles by eminent authorities on a variety of important and interesting musical topics. Among these articles are: "The Evolution of the Orchestra," by H. T. Finck; "The Evolution of the Dance," by L. C. Elson; "The Art of Conducting," by Anton Seidl.

GREAT COMPOSERS.—Two of the sections of this encyclopedia are devoted to biographies of thirty-six great composers. These biographies are altogether readable, and at the same time are accurate and critical. They not only contain the "story lives" of great composers, but also comprise a biographical history of the beginnings and growth of musical art. They are written by the best authorities.

RELIGIOUS MUSIC OF THE WORLD.—Religious music in various forms is the oldest as well as the best-known class of music. This section treats of religious music of ancient and modern times—non-Christian hymns, Jewish hymns, Latin hymns, modern hymns and hymn-writers, oratorios, anthems, masses, motets, chants, etc. Every form of religious music is clearly and fully described. There are special chapters on "Great Hymns and Hymn-writers," "What Constitutes a Great Hymn," "Children's Hymns," "The Best Hymn-Tunes," etc.

VOCAL MUSIC AND MUSICIANS.—This division contains not only a history of singing from prehistoric times to the present, but also special articles by experts on singing and the vocal art. It includes descriptions of famous songs, biographies of great song-writers, and studies of great singers and the methods by which they have achieved success. Here are helpful articles on singing and vocal study by Madame Marchesi,

Madame Melba, Victor Maurel, and others of equal reputation.

THEORY OF MUSIC AND PIANO TECHNIQUE.—In this section will be found a clear exposition of musical science. It is an entertaining treatment of what is generally considered a dry and uninteresting subject. It is for music-lovers in general, as well as for special students. Under the head of Piano Technique are special articles by Dr. William Mason, S. B. Mills, B. J. Lang, Mark Hambourg, and other well-known exponents of this branch of musical art.

THE OPERA: HISTORY AND GUIDE.—This section presents a narrative and critical history of the rise and development of the opera from its earliest beginnings to the present day, with interesting biographical references to the composers of great operatic works. It gives the story—plot—and prominent characters of all the more important operas. It is, as its heading implies, both a history of the opera and a guide to the understanding of its chief representative productions.

DICTIONARY OF MUSIC AND MUSICIANS.—In this department is given a selected but ample list of musical terms, with biographies of musicians—composers, singers, instrumentalists, etc. The biographies are sufficiently full for ordinary reference.

We confidently present this latest musical encyclopedia for the use of students and lovers of music, and for the enjoyment of general readers interested in the delightful field of art here brought within their view.

The Publishers

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Three Forms of Musical Instruments: the Drum, the Pipe, and the Lyre—Their Succession Established as the Law of Development of Musical Instruments in Prehistoric Times—The Stages of Early Musical History.

MUSICAL instruments, though their varieties may be counted by hundreds, are yet readily reducible to the drum type; the pipe type; and the lyre type. Under the first head fall drums, rattles, gongs, triangles, tam-tams, castanets, tambourines, cymbals—in a word, all instruments of percussion. Under the second head fall flutes, oboes, clarinets, bassoons, horns, trumpets, trombones, bugles—all wind instruments. And under the third head fall all stringed instruments, comprising the harp, lyre, lute, guitar, the violin (with all its varieties), the mandolin, dulcimers, pianos, etc., etc. These three types are representative of three distinct stages of development through which prehistoric instrumental music passed, and the stages occur in the order named. The first stage in the development of instrumental music was the drum stage, in which drums, and drums alone, were used by

man; the second stage was the pipe stage, in which pipes as well as drums were used; the third stage was the lyre stage, in which lyres were added to the stock.

Savages sometimes have the drum alone, but never the pipe alone, or the lyre alone; for if they have the pipe, they always have the drum too; and if they have the lyre, they always have both pipe and drum. We find the drum to be the only musical instrument known among the Australians, the Eskimos, and the Bering nations generally, the Samoyeds and the other Siberian tribes, and, until a comparatively recent date, the Laplanders.

With the Polynesian Malays and the Papuans the pipe makes its appearance, while in no single instance is the drum found wanting. Both pipe and drum are in use among the tribes on the Upper Amazon, the Indians of the Rio Negro and the Uaupes, the Tupis, the Omaguas and neighboring tribes, the Artaneses, and Tacunas, and generally the rest of the Brazilian tribes; the aborigines of Guiana, the Aymara Indians of Bolivia and Peru, the Gauchos of the Platine region, the Abipones of Paraguay, the Patagonians. What is true of the South American Indians is equally true of the North American Indians.

Where the lyre appears, both pipe and drum are found as its never-failing complements, as with the Dyaks of Borneo, the Khonds of Khondistan, the Finns, the Tatars, the Cossacks, the Turkomans, the Hindus, and the nations of history.

Throughout the Pacific Islands the drum is the instrument of the priests. Catlin mentions it as appropriated to religious ceremony among the Assiniboins, Mandans, Crows, and Sioux, and his assertion may be

extended to all the North American Indians. It is the instrument of the priests in Guiana, and forms an essential element in the ritual of the Patagonian wizards; similarly used among the Abipones and other South American tribes, particularly the Guaycurus, at that beautiful ceremony with which they every morning welcome and adore the rising sun. The drum is depicted on the walls of the holy places in the ruined temples of Copan and Palenque; and, not to speak of its use in ritual among the Peruvians and Mexicans, a glance at ancient nations will remind us of the sistrum of the Egyptian priests, and the cymbals of the Assyrian and Hebrew priests. With the Greeks, the drum in its various forms of drum, tambourine, cymbal, and rattle was customarily employed.

The evidence of mythology is chiefly valuable for the hints it gives us about the order of succession—we are now speaking of the mythology of civilized peoples. Athena invented the flute, but afterward threw it away because it distorted her features, and took to the lyre instead. When Apollo received the lyre from Mercury, he praised the wonderful sound which neither gods nor men had heard before, for up till then he had been contented with the amorous sighing of the flute. But long before Athena's flute or Apollo's lyre was heard, music had come into being with the cymbals of the Curetes, says the legend in Herodotus, and from these simple elements all Greek music, it avers, was subsequently derived.

Legends of Egypt tell the same tale as those of Greece. Osiris invented the flute, and Isis the sistrum; but it was the Egyptian Hermes or Thoth, a deity of later date than either of these, who invented

the lyre. Indian legend keeps up the order of succession. Vishnu was the inventor of the trumpet, and, in his avatar as Krishna, of the flute; but it was Nareda, the son of Brahma, who belongs to the second generation of gods, that first invented the lyre.

CHAPTER I

THE DRUM STAGE

The Origin of Music—The First Musical Instrument—The Drum-god—Drum-worship—Musical Religions of Savage Races—The Structure of the Drum, and its Gradual Progress to a Perfect Type of Instrument.

THE savage who for the first time in our world's history knocked two pieces of wood together, and took pleasure in the sound, had other aims than his own delight. He was patiently examining a mighty mystery; he was peering with his simple eyes into one of nature's greatest secrets. The something he was examining was rhythmic sound, on which roots the whole art of music.

The great seat of drum-worship was South America. Even at the present day it is to be found in full vitality in the interior of Brazil; but a hundred years ago it could be said that "the drum was the only object of worship from the Orinoco to the Plata." This is two-thirds of South America, and as it is more than probable that the great Southern region formerly designated as Patagonia should be added too, this would make the area of the cult nearly coequal with that of the continent. The fetish, though it belongs to the genus "drum," is strictly of the rattle species. The maraca, as it is called, is a hollow gourd, with small stones or hard corn-seeds inside it, generally the former, which rattle when it is shaken. Without his

drum the Lapland sorcerer was powerless; but with it, and by its aid alone, he could do all his wonders. The Laplanders used the drum to find out what sacrifice their gods desired; but the Brazilians, who believed "that their devil dwelt in the maraca," offered sacrifice to the maraca itself. The Laplanders believed that the drum put them in communication with spirits, and had the power to predict the future.

Though Lapland and South America were the great seats of drum-worship, it was not confined to these countries by any means; for, stretching in an unbroken line along the entire extent of Northern Siberia to Bering Strait, passing over into the New World, trending right into Greenland, and descending in full force through the whole of North America, interrupted for a moment by the ancient civilizations of Mexico and Yucatan, but taking up the running again at the Orinoco, and never stopping till it gets to the bottom of Patagonia, an unbroken series of traces of the same idea extends. So unmistakable is the family resemblance that the constant repetition of the same phenomena through all the countries enumerated would seem to warrant the conclusion that from the North Cape down to the Strait of Magellan, at some period in the history of mankind, an organized system of religion prevailed in which the drum was worshiped as a god.

Among North American Indians the prophetic art is attained by the agency of the drum.

The history of the bell is a counterpart to the history of the drum. Whoever cares to peer into the records of that era of naïve credulity which we call the Middle Ages will find the same superstitions

which were connected with the drum reappearing in connection with the bell. He shall read of bells being thought to speak, of bells thought to be alive, of bells dressed, and arrayed with ornaments not unlike the fetishes we are now considering. Maracas could influence the "fertility and sterility of the ground," and bells were rung "to make a good harvest." The Natchez used rattles to conjure the weather, and our own forefathers hung bells in their churches, "to break the thunderbolt and dispel the storm."

The drum was used for other purposes than worship. It was used to mark rhythm in dancing, and in the absence of any other instrument was put to most striking use as a means of human expression. The Eskimos use their drum "to express their passions"; the Manganjas "to express their joy and grief."

It is to Australia, which has been happily termed "the asylum for the fauna and flora of past ages"—to the "poor winking New-Hollanders," as Dampier calls them—that we must turn if we would find the living resemblances to the musical instruments used by primitive man. In that tranquil continent not only has the animal and vegetable world stagnated, but human life "set" early and was fossilized; and so in the present aborigines we may see very well what we were ages ago.

Their musical instruments are all extemporized for the occasion—thrown away as soon as used, most of them. Sometimes they beat two pieces of stick together, or two green branches, or shake bunches of boughs. At other times their instruments are still more elementary, being simply those which nature has given them.

The bystanders accompany the dances at times by stamping their foot on the ground or clapping their hands, a method of drumming carried to its esthetic climax by the Andamanese. This same naïve use of "natural instruments" is to be found among many tribes far in advance of the Australians in point of civilization. A considerable advance on the boughs and sticks was made when spears were used in the same way, or when the women "rolled their skin cloaks tightly together into a hard ball, and beat them upon their laps with the palms of their hands."

Preambles, as we may call them, to the drum proper may also be studied in the clubs of the New Caledonians, the paddles of the New-Zealanders, the clubs of the Makololos, the paddles of the Tonga Islanders. A still nearer approach to the drum proper was made when such a thing as a spear-board was "beaten with a short stick held in the middle." Here the isolation of the sound-generator had so far advanced that a generator was employed "which required some practice to play it." Yet ages wore away before any such thing as extra resonance was seriously sought after. In the hollow inverted bowl of the Hawaiians, which is struck by the foot, we first find ourselves in the transitional stage when man had awakened to the fact that hollowness is the first condition of resonance. This idea is wrought to its logical completion in the hollowed-out logs which serve the Samoans, many of the Amazon tribes, the Ugoma negroes, and the Fijians as very good drums.

Covering these hollowed-out logs with a skin head was a mighty step in the history of music.

With the invention of a stretched skin over a hol-

lowed-out log—the form of drum to be found on the very earliest Egyptian sculptures, and clearly existent long before any historic record—the instrument reached its perfection, and man has never been able to improve upon it since. Mechanical ingenuity might strike out new shapes, artistic genius might adorn it with devices cut on the barrel, but the principle that the drum must be a hollow cylinder, with some sort of skin stretched over the end, has never been questioned from that day to this.

The resonance of the drum became in due course of time the prime object of admiration with its rude manufacturers. So man set himself to work to increase its resonance, either by enlarging its bulk or making a hole in its side, or by using particular kinds of wood for it, or, better still, by getting a more resonant drumhead.

CHAPTER II

THE PIPE STAGE

The Horn and the Flute the Leading Types of Wind Instruments—The Horn Invented for the Purposes of Warfare—Its Use in Warfare—Love the Origin of the Flute —The Courting-flutes of Savage Nations.

THE pipe stage speaks of a far higher intellectual development than the drum stage did. Unlike the drum, which became out of the darkness of nothing we can scarcely tell how, the pipe was made consciously to satisfy purely human needs.

First let us consider the elder branch of the pipe family, that is, the horn and trumpet species, for there is good evidence that these saw the light considerably earlier than the smaller members of the family to whom the term "pipe" is more properly applied. Among modern savages the use of the horn is in nearly every case limited to warfare. Savages of many tribes commence their attacks with a blast of horns and trumpets.

This use of the horn in warfare is plainly an infringement on one of the uses of the old drum, for the drum was supposed "to give victory over enemies." All panic is derivable from trumpet-like sound, if we may trust the derivation of the word which refers the first panic to the time when the great god Pan put to flight an army of Indians by a sudden

shout, just as he set the Titans running on another occasion by a similar means.

Though we might well hesitate to say that the savages looked for a result so entirely miraculous, we may suppose that their horns and trumpets were designed to increase the terror of their onset, and contribute to scaring the foe, since we find them all doing their best to increase the sound of their horns and trumpets to unparalleled heights, and apparently having no other object in the manufacture of them than the production of "hellish sound."

Once proved efficacious for scaring the foe, what so natural that man should employ his horn as a weapon again his arch enemies the spirits? That it was on the frightening power of the horn, and no other, that man relied for its ability to influence the spirits may be seen from the ceremony which is practised by the lamas of Tibet, and which may be taken as a representative of similar ones among other peoples. At stated periods, M. Huc tells us, four thousand lamas assemble on the roofs of the various monasteries, and blow trumpets and conch-shells all night long. An old lama gave him the following explanation of the rite: It had been established, he said, to drive away demons by which the country had formerly been infested. They had caused all kinds of maladies among the cattle, corrupted the cows' milk, disturbed the lamas in their cells, and even carried their audacity so far as to force themselves into the choir at the hour of prayer. During the night these evil spirits used to assemble at the bottom of the ravine and frighten everybody in the neighborhood out of their wits by the noises they made, till at last a learned

lama hit upon the idea of fighting them with their own weapons, and imitated their cries with horns and conch-shells—most successfully, it would seem.

The magic horn of the South African rain-maker gets its magic on precisely the same terms, for the louder the sound, the more potent is the spell. To the same category must be referred those ceremonies which take place in many nations at the time of the new moon, or at an eclipse—in either case for the same reason, and whether the spirits are to be frightened from the young crescent, or from the sick and blackened disk they have bewitched, trumpets will be equally efficacious. Of these the ceremonies of the Peruvians may be taken as good illustrations, of the ancient Mexicans, and of the Romans as described by Tacitus.

The origin of the flute, or smaller form of "pipe," must be sought on other grounds. It is impossible that its soft velvety tone should have the same origin as the sound of the trumpet, which frightened enemies and evil spirits. The Greeks, who were nearer the first movements of human civilization than we are, assigned its invention to the great god Pan. The heart of their legends is generally sound, and we may presume that whenever the great god Pan —the gayest Lothario of Olympus—comes prominently forward as an actor in the human drama, we are on the verge of an amour.

The flute is not only the darling instrument of those savage nations who are renowned for their gallantry, but there are also cases of the original use of the instrument surviving in all its purity. Among the North American Indians we find what is called

the Winnebago courting-flute. "In the vicinity of the Upper Mississippi," says Catlin, "a young man will serenade his mistress with it for days together"—they sit on a rock near the wigwam and blow without intermission—"until she accedes to his wishes, and gives him her hand and heart." The ancient Peruvians had a regular love-language for the flute, and so powerful an appeal could it make to the female heart that there are stories of girls being drawn from a distance by the sound of the flute, and throwing themselves into the arms of the man who played it.

The mere fact that the love-call, to borrow an expression of Darwin's, is the only definite purpose for which the flute is employed among savage races, outside of its later employment as a musical instrument, is sufficient to communicate a peculiar character to the instrument, and there need be no hesitation in assigning its origin to the love-call. Darwin finds the origin of all instrumental music in the love-call. We content ourselves with referring the flute and the pipe to that origin.

It is highly probable that the flute was first played by the nose. This, at least, is the manner of playing which prevails in the Society Islands, the Friendly Islands, the islands of the Samoan group, the Marquesas, and generally throughout Polynesia, which is *par excellence* the home of the flute. That idiotic grimace into which one playing the flute with his mouth is compelled to contort his features, and because of which Greek sculptors were afraid to represent their flute-players in the act of playing, means a highly artificial pose of the features, and we may be sure that anything highly artificial is not primi-

tive. Long practice is necessary before the art of blowing the flute with the mouth can be even tolerably acquired, but it can be played easily at the first attempt by blowing with the nostril, as the breath comes from that at the precise angle necessary to produce the tone.

CHAPTER III

THE VOICE

The Origin of Song—Its Development from Speech—Evolution of the Scale—The One-Note Period in the History of Music—The Two-Note Period—The Three-Note Period—The Succeeding Periods—Dancing, and its Influence upon Song—Origin of the Minor.

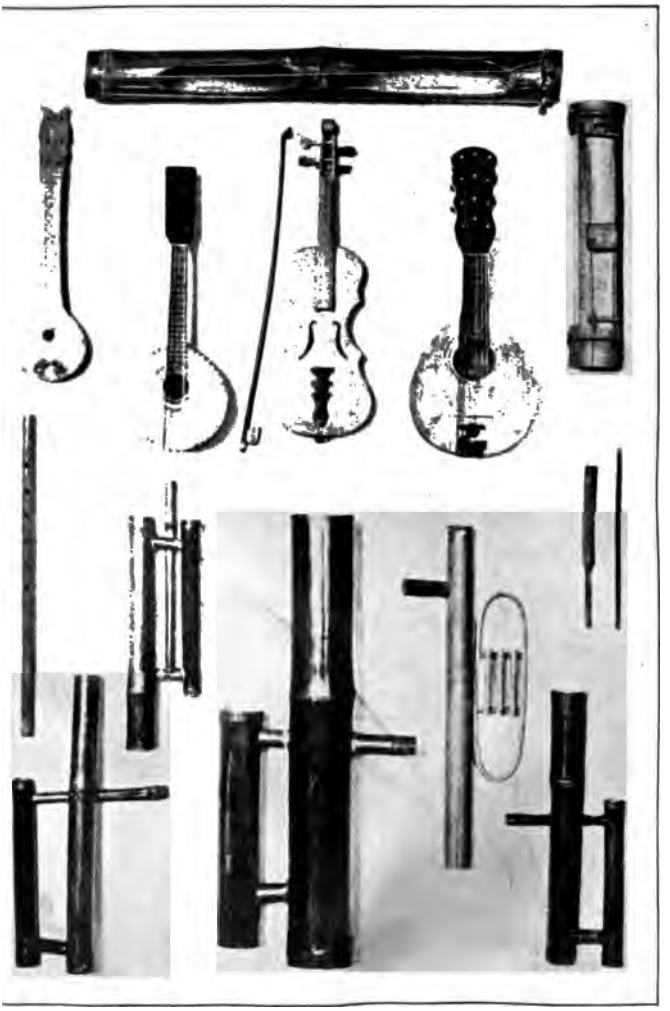
THE origin of vocal music must be sought in impassioned speech. Song is an outpouring of the heart, and an artistic embodiment of the language of emotion. Joy, grief, love, hope, despair, heroism, fortitude, despite the universality of music, will remain her favorite themes to the end. Moved by such feelings as these did primitive man first raise his rugged voice in the accents of passion. With primitive man emotional speech was far more common than with us. Hence the otherwise inexplicable fact that savages can extemporize song after song with the greatest ease.

But impassioned speech is not singing, and the points of difference between the two are many. In singing we use the whole range of our voice; in speaking we use only a part of it. When we sing we single out certain tones and keep to them; when we speak we never rest on any one tone; indeed, the subtle inflections of the voice between one tone and another become the means of expression. How

did the conversion of speech into song proceed? There were certain influences at work from a very early period indeed, and the first and most important was the influence of the story, reciting the deeds of the past, the events of the chase or of the war-trail, and the like. These things were told round the camp-fires or in the gloom of the caves, and somehow in such narration men acquired the habit of confining the voice much to one note. In the rise and development of story-telling we hail the rise of the chant. The practical effect of the chant, or practice of intoning, would be to correct that fluctuation and unsteadiness of tone which is so essentially the characteristic of speech.

First, men were content with one note. The spoken phrase at the normal pitch of the speaking voice would of itself settle down into this one note under the influence of the chant. It is probable that the first musical note was near to g, and for a long time the whole musical art lay in embryo in that note. At the present day the songs of savages are nearly all at this pitch, that is to say, with g for the keynote; and those savages who have only one note in their music usually have g for that one note.

The practical effect of chanting on impassioned speech would be to isolate the tone from the words; and the struggling into being of the one note would bring the isolation clearly before men's minds. We may suppose that the next step would be to treat the tone objectively, to make it the subject-matter of art. Men would come to enjoy the sound of itself, and study to give it variety, and while this object would be first secured by variety of rhythm,



INSTRUMENTS OF THE PHILIPPINE ISLANDS

the tendency would ultimately result in the addition of another note to the compass of the chant. A one-note period would be succeeded by a two-note period. There is nothing improbable in the assumption that there was a period, and probably a very long period, in the history of primitive man, when the whole resources of vocal music at his command consisted of two notes.

After a period of two notes one more note was added to the compass of the chant, and, as was natural, it was the next note above. In the one-note period variety could only be gained by rhythmic means. In the two-note period the same means would be principally employed. But when three notes came to be used, there was the temptation to gain variety by the melody. It is easy to see what a complete reformation the addition of one note to the existing two would work in the art of music. For besides the scope it would give to melody, three notes would form a scale.

The early development which the scale passed through was not, as for example we might imagine, the addition to c′, d′, e′, of the next note above, f′, but the superposition of a new and smaller scale of two notes, g′ and a′, on the old scale c′, d′, e′.

We may term the old scale of three notes the great scale; the new scale of two, the little scale. That this was the progress of development we have positive evidence, not merely from the songs of savages, but from the musical systems of the civilized nations of antiquity, in all of which, without exception, there are obvious traces of a well-defined scale of five notes: c′, d′, e′, g′, a′. The best evidence of the five-note scale is that afforded by the Chinese, who at the

present day use no other; and the same remark applies to the Indo-Chinese.

If all language passes through three stages, the first monosyllabic or isolating, the second agglutinative, and the third inflectional, we may similarly assert that music passes through three stages in its evolution of the scale. The first stage is isolating: c′, d′, e′, g′, a′, where the great scale and the little scale remain isolated from one another, as is found in the most ancient music of the nations of antiquity, the music also of many savages and of the Chinese. The next is the agglutinative stage, when these two scales are agglutinated by the insertion of the fourth: c′, d′, e′, f′, g′, a′. Last comes the inflectional stage: c′, d′, e′, f′, g′, a′, b′, when, by the insertion of the seventh, the scale is enabled to pass naturally to the octave above, and to modulate to a new scale on the keynote of its fifth.

We have considered the influence of the chant in turning speech into song, but all the while there has been another influence at work. Perhaps more strongly noticeable than the steadiness of the notes in all specimens of primitive song is their rhythmic character, due to the influence of dancing. Men singing when dancing would naturally accommodate their song to the beats of their feet, so bringing two species of rhythm to bear upon their song. In every dance there are two kinds of rhythmic movement: the rhythm of the steps and the rhythm of the motions—foot rhythm and figure rhythm.

That frolic of the body or wanton enjoyment of motion called dancing expresses itself by a certain movement of the foot which is peculiarly its own, and must have been natural to it from the very first.

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SPANISH DANCING, CADIZ

The step and the stride belong to the walk, but the property of the dance is the skip. But besides the skip—which we may take to be the general and typical motion in dancing—there are other motions which seem all more or less to be derived from the skip. There is the shuffle, which may be called skipping without moving from the place; there is the trip, which is the moving shuffle, for in it each foot makes a short and long, and still the body moves, going straight along as it does in skipping; and there is the double skip, which consists in right heavy, left light, right heavy, and left heavy, right light, left heavy. All these steps are what children use as soon as they have learned to walk and run, and are almost as primitive as walking itself. Thus we have four rhythmic movements of the feet—the skip, the shuffle, the trip, and the double skip.

Besides the steps that the feet make in the dance there are the motions of the body to be taken into account; that is to say, besides foot rhythm there is also figure rhythm to be considered, which plays its part in all these motions of stepping.

Singling out the skipping form of dance as the simplest one wherein to show its influence, we shall easily see how the development of song proceeded. After the dancer has skipped forward for some distance in any given direction, he suddenly pauses and skips away in the other, goes backward and forward, now to one side, now to another, keeps up an alternation of right foot leading, left foot leading, and skips in sets of skips without knowing he does so. At the end of each set a step is lost, for except by missing a step there could be no change of feet. So each set

is marked off from the other by a pause, and it will be plain what effect this will have on the song the man is singing; for it will produce in it a rhythm outside a rhythm. The melody will be cleanly divided into sets or groups of notes; for the first of each group, being the first skip of a new set, would have a stronger emphasis than all the others that followed, the foot being fresher when it struck it. And so the man would have divided his song into bars, and his words he would have divided into lines. This is how verse began.

Names are sometimes the best conservators of the traditions of the past, and as the term "feet" in poetry shows us clearly enough the source whence verse has sprung, so the term "rest" in music speaks equally plainly of short moments of repose in the hurry of the dance.

By the help of these considerations, and by reference to the songs of savage nations, it will be seen how great has been the influence of the dance upon impassioned speech, and to what artful and even intricate forms it has molded the natural inflections of the voice. Those songs, on the other hand, which do not exhibit the rhythmic contour so strongly, we must consider to have grown up under the influence of the chant. Indeed, we might almost divide all primitive songs into dance songs and chant songs.

The minor scale is in use in primitive songs no less than the major. Every one is familiar with the character of the minor key—its plaintiveness, its solemnity, its pathos. As the major expresses in an artistic form the joy and the elation of impassioned speech, so the minor is an artistic embalming of the language

of grief. When a man grieves, his voice does not rise so buoyantly as usual—it droops as the spirits do —it is sluggish and weary, and shirks the pleasant trouble of free exertion. So it speaks short of its usual intervals, and in declaiming it will do the same. It should seem that this failure of the voice, though showing through all the intervals of the scale, would be likely most to show in the highest note of it, for there it is that the effort lies. Wherefore, if this be true, the great scale would be sung c′, d′, e′ flat, instead of c′, d′, e′, and the little scale g′, a′ flat, instead of g′, a′.

By means of the minor scale the dirge of the savage is reëchoed in profounder strains by the great composers who move us with the contrasted effects of lamentation and triumph expressed through minor and major modes. Indeed, some composers have adopted savage themes and elaborated them in works at once reminiscent of primitive culture and inspired with the soul of art.

CHAPTER IV

THE LYRE STAGE

The Beginnings of Stringed Instruments—The Lyre the Instrument of Barbarians—The Bards of Barbarian Nations —The Universality of Music in this Stage of Development —Music Coequal with Culture—Music as a Moral Power.

THE lyre stage speaks of far higher culture than the two preceding stages, and is contemporaneous with the emergence of man from the savage state into that higher condition of development to which the name "barbarism" naturally applies.

The lyre was the dower which the great Aryan race brought to Europe. It was developed and invented in that wonderful Bactrian home of our ancestors where so many great and beautiful things were nursed into life. In studying the history of the lyre among the hordes of Central Asia, we shall not merely be studying a reflection of it, as in the case of the pipe and the drum, but we shall be studying it in the very place of its birth.

The Tatars are the troubadours of Asia—and of Asia in the widest sense of the word—penetrating into the heart of the Caucasus on the west, and pacing the country eastward to the shores of the Yellow Sea. "The wandering bards in Circassia" (this brings Europe, too, into the computation), says Herbert Spencer, "are generally Kalmucks." "They are often

met with in Tatary," writes M. Huc; "very numerous in China"; "nowhere so popular as in Tibet." "They are called Toolholos, and remind us of the minstrels and rhapsodists of Greece." Marco Polo tells us that the Great Khan had so many of these minstrels at his court that, in order to get rid of a few of them, he sent an expedition against the city of Mien composed entirely of superfluous minstrels. When we read that they took this strongly fortified town, we may imagine the extent of the superfluity.

The minstrels are "the greatest delight of the Circassians," "the chief pleasure of the Kirghiz hordes," "the delight of the Crim Tatars," "every house open to receive them," "everywhere a corner for the bard," "every one favored by a visit from him," "all through Persia received with joy." Often each chief has his minstrel.

M. Huc's description of a performance will give us the picture: "For as he was speaking the minstrel was preluding on the chords, and soon commenced in a powerful and impassioned voice a long poetical recitation on themes taken from Tatar history. Afterward, on the invitation of our host, he began an invocation to Timur. There were many stanzas, but the burden was always: 'O divine Timur, will thy great soul be born again? Come back! come back! we await thee, O Timur!'"

Here the voice is everything, the instrument nothing—often not used at all, or at best to strike a short prelude announcing the entry of the voice. If we assume, as we have reason to do, that the primitive method of playing the lyre was such as we find here, we shall see why the lyre first saw light among the

nomadic tribes of ancient Asia; for in the tranquillity of the nomadic life there comes a great gush of poetry from the human heart such as can never come again after the hum of cities begins to sound, and the bustle of business to occupy man's mind. And we shall further see why it was that the lyre has its particular form—strings stretched on pegs and twanged with the fingers—in other words, why such a form as the lyre succeeded to the pipe; for the pipe bound the mouth, the lyre set it at liberty, and enabled it to utter the great thoughts that filled the heart. Do not seek, then, to find the first idea of the lyre in the twang of the bowstring which the savage heard as he shot his game. Far from being a connection of the bow's, the lyre would seem to be inimical to it, if it is really an outcome of the nomadic state, when bows and arrows are laid aside.

The lyre, then, came into being as an instrument of accompaniment. In its rudest form it was probably a string or two stretched over a board or a stick, and twanged with the fingers—a small light instrument that would lay the least possible tax on the player and allow him to give his best attention to the song. Its form was the first easy development of the Jew's-harp form, that is to say, more like a lute than a lyre.

Such an instrument would be quite sufficient for the purpose for which it was intended—to prelude or strike a note or two by way of accompaniment to the song. Strings would be added in course of time; for the art of stopping had not then been discovered, nor how one string contains all harmonies as one ray of light all colors; but each new note meant a new string: the history of the pan-pipe repeated itself, in

which each new note meant a new reed. After four strings were added, there was a pause; for none of the primitive stringed instruments that we know of have more than four strings.

The next development of this primitive instrument or lute was to take the step by which the true lyre came into being. This was effected by cutting away part of the board at the back of the strings and leaving an empty space, from one end of which to the other the strings ran, having now the benefit of a frame to be fastened to, and thus allowing far tighter stringing than when they were merely confined by pegs at each end of the board. Or perhaps the object of the cutting was to allow the strings to be struck instead of twanged, and struck, that is to say, by something else than the fingers, as a piece of bone or metal, which would deal a sharp blow and make the strings sound louder. The Scythians struck the strings of their lyre with the jawbone of a goat, and the Massagetæ struck theirs with the splinters of spears, and perhaps this may have been the reason. Now the development, having proceeded thus far, instead of going on regularly through the lyre to the other stringed instruments, breaks into two branches. These are (1) the lute and its descendants, including the lyre, etc., and (2) the lyre's descendants.

The lute is the parent of all instruments whose strings are plucked by the fingers; and the lyre is the parent of all instruments whose strings are struck by a plectrum or hammer. The lute gave birth to the harp, and the lyre gave birth to the dulcimer; or, in other words, the lute obtained its increase in power by increasing the size and the tension of the strings

themselves, the lyre by increasing the force with which they were struck.

This is how the lute produced the harp. The stick or board on which the strings lay pegged was bent a little, so that the strain might be divided between the pegs and the board or stick itself; and then this bending went on more and more, till at last it was found that the strain might be thrown wholly on the board or stick by bending it into the form of an arch. When that was done, the lute had grown into a harp. But the lyre never changed its form.

The stopping of the lute's strings was discovered as soon as the lute got a neck. In the primitive form of a piece of straight board with strings lying over it, there was no likelihood that the art of stopping would be learned, but the instrument would be played as nowadays we should play an Æolian harp (which, indeed, it very much resembled), or as the Chinese play their lute at the present day, resting on the knee, or on some artificial support, or perhaps on the left arm, while the thumb of the right hand steadied it underneath and the four fingers twanged the strings. When, for convenience of holding, one end of the instrument was made narrower so as to be grasped by the left hand—directly the left hand went round the strings, it could not help pressing them sometimes as it held them, and the difference of tone which the pressure caused would be at once noticed, and in course of time would be acted on.

The new music which came into being as the direct consequence of the appearance of stringed instruments in the world was the music of harmony; and its spirit was the disciplining of the instrumental by

the reason of the vocal. The musical instrument, which in the pipe stage was used but to fling a cataract of idle sounds, now became the means by which actual thought could be expressed. At first it was only used to strike a prelude independently before the voice began to sing. Its development had several stages, and when the last stage was reached, when the instrument and the voice went hand in hand, note for note, and word for word, the instrument would be almost as skillful as the voice itself in expressing the minutest flickering of thought.

CHAPTER V

THE EGYPTIANS

Music in Egypt during the Nineteenth Dynasty—Instruments of the Egyptian Orchestra—The Great Harp—Egyptian Music from the Times of Menes to the Times of the Ptolemies—The Music of the Temples.

PASSING now from the fastnesses of the barbarian to the lawns and enclosures of civilized man, it will behoove us to see in what guise our art appears under these new conditions. Let us enter the land of the pyramids at the beginning of the nineteenth dynasty, about 1350 B.C., when the power of Egypt, which had been steadily mounting during the eighteenth dynasty, had now reached its height under Rameses II. Passing down the crowded streets, where, through the open shop-fronts, we may see the artisans in thousands at work at their laborious daily tasks, let us go in quest of music. We may traverse the busy streets of Thebes or Heliopolis in vain, and it is not till the shades of evening fall, and the entertainments of the wealthy begin, that we discover the existence of music in Egypt at all. We have to penetrate some brilliantly lighted hall full of guests and attendant slaves; and at the far end of the luxurious room we shall see a band of men and women playing on their instruments, amid all the clatter of the dishes and the chatter of the guests. They are all slaves, and before every piece they play they do obeisance to the

master of the house. The business of these slaves was to attend the banquets of the great, and play and sing for the amusement of the company. We find them constantly represented in the sculptures in groups of from two to eight persons—some women and some men—playing on various instruments, as the harp, pipe, flute, etc.

Let us not forget that we are in the land of hieroglyphics, and that besides the figures on the surface a hidden meaning may remain behind. The sculptors who gave us these books of stone, which we have lately read off into words, are indeed the historians and annalists of Egypt. But in reading the books that they left us, we must remember that we are perusing the words of men who had only a limited space to express themselves in. When, therefore, they would speak of an army, they sculptured four men—this had to do duty for as many thousands. Their records are essentially abridgments, and in the pictures of the concerts we must not necessarily suppose that one harper, one piper, one flute-player, and one singer form the entire band, but that they are only the typical representatives each of a whole division of performers.

As a mere mechanical result of grouping various instruments together, some form of harmony must have grown up. Whether this partook of the nature of a mere single-part accompaniment, or whether it was a regular three or four part harmony, may admit of conjecture. But most probably it was the latter.

A full Egyptian orchestra was thus composed: twenty harps, eight lutes, five or six lyres, six or

seven double pipes, five or six flutes, one or two pipes (rarely used), two or three tambourines (seldom used).

If vocalists were added, which was not necessarily the rule, they would number about three-fourths as many as the harpers.

The harp was the foundation of the Egyptian orchestra. Now the harp is essentially anti-chromatic. It is plain, therefore, that the Egyptian harmony was purely diatonic, such a thing as modern modulation utterly unknown, and every piece from beginning to end played in the same key.

The compass of the orchestra was considerable and may have been nearly as great as our own, even though not possibly used for harmonies.

An Egyptian instrument that may be called musical was the sistrum. This was a set of metal bars in a frame, so arranged that when shaken they gave a sound like modern sleigh-bells. The sistrum was used for rhythmic effects and played an important part in ancient dances. It may have been used also for giving signals, in some working-choruses.

Let us now go back to the supposed founder of the first Egyptian dynasty, about 5000(?) B.C. Up to this time the only rulers of Egypt of whom we hear were mythological gods and demigods. We are told that they went about among the people, instructing them in the arts of peace. They were accompanied everywhere by troops of musicians. What instrument these musicians played we are not informed, but we may imagine that they played the oldest of the Egyptian stringed instruments—the lute of Thoth—the only instrument which appears in the hieroglyphics.

It was a little lute, shaped like the ace of spades, with an elongated neck, and fitted with three strings.

Then came Menes, "the strong man," and with him came Egypt's oppression. The people got their civilization and lost their music. Now that they adopted settled habits, and left their wandering life, their tents and leaf huts began to pass into permanent stone houses, and so did the portable lute of Thoth into the non-portable harp. Its form was slightly bent so as to admit of greater tension being applied to the strings by the benefit of the curve, which would partially remove the pressure from the pegs on to the body of the wood.

By the fourth dynasty the change was complete, and the connecting link between the lute and the harp had dropped out of sight altogether. The harps of this dynasty had six strings instead of three, which were fastened, as they had been in the lute, to pegs at the top and to the body of the instrument itself at the bottom. They were all bass, the place where the treble strings come being left quite bare; so that in these harps we see the progenitors of the great harps of Rameses's time. The orchestras of Cheops's time were very simply composed—bass harps, tenor or alto flutes, and single pipes formed the *tout ensemble*.

During the fifth dynasty the frame of the harp was bent still more—into a perfect semicircle; the lower part of it was greatly thickened, and had its bottom flattened, by virtue of which the harp could stand alone. In the thickening of the lower part we may see the first dim gropings after a soundboard.

By the twelfth dynasty this tendency was carried to

its completion, and the harp furnished with a perfect soundboard. In the dark period between the close of the fifth dynasty and the opening of the twelfth the thickened and flattened pillar of the harp had been first thickened still more, then hollowed out, then rounded, and finally finished off into the shape of a kettle-drum. Thus was the harp provided with a regular soundboard, which greatly increased the volume of its tone. Small harps were now made as well as great harps; lightness was studied in the orchestras as well as massiveness. Sweetness also was an object of study, and the long-necked lutes now began to appear, affording another foil to the boom of the great harp.

Harps were now made of a particular sort of wood —sycamore—which was specially imported from distant countries for the purpose. The frame was covered with all sorts of fancy devices to attract customers, and the mechanical ingenuity of the craftsmen suggested a new method of fastening the strings, which bears a close resemblance to the way in use at the present time. Egypt, which was now the center of the civilized world, was brought into contact with many foreign nations, products of all parts of the earth flowed into its markets, and among the rest a Semitic lyre, an instrument never seen in Egypt before. It was merely a battered old square board, of which the top part was hollowed out into a kind of gibbous frame, on which seven strings were strung. There was no attempt at decoration; even the edges of the board were all left rough; the strings were simply twisted round the frame and tied in knots. Primitive though the thing was, it caught the public

fancy. Its tenure of favor was lasting, but would probably have been brief had not its advent been shortly succeeded by the arrival of the Shepherd Kings, who probably brought a still ruder form of their national instrument with them.

By the beginning of the eighteenth dynasty the lyre had become a recognized component of the Egyptian orchestra, having undergone many improvements, not only in the increase of the number of its strings, but also in the finish of its make. The rude board had by this time given place to a handsome instrument of from ten to twenty-two strings. At this time we may find a sure trace of Semitic influence in the introduction of the dulcimer, which appears for a moment, but never took root as did the lyre.

The Semitic lyre in the eighteenth dynasty began to dispute the soprano place in the orchestra with the indigenous small harp. That the quality of its tone was rather sweetness and softness than strength, we may infer from its always being played by women. And since the small harp, which was played by men, was fast giving place to it, we may fairly conclude that sweetness and beauty had become the leading characteristics of the music itself by this time. Another fact also points in the same direction—the alteration which was taking place in the form of the harp. The old curved form was now being fast abandoned, and the small harps were constructed with a frame of triangular shape, with strings strung obliquely across it. In this harp we have the parent of the notorious sambuca.

The great harp, however, still remained true to its old form, and like a rock kept back the unwholesome

current. Standing nearly seven feet in height, and fitted with eighteen sonorous bass and tenor strings, it must have ruled the orchestra like a king, and have served as a standing protest against the meretricious tendencies of the time.

Other characteristics of this age were the growing fondness for female singers and instrumentalists; the daily increasing popularity of the double pipe, which was played almost exclusively by women; the more frequent use of the tambourine than in former dynasties—all pointing to an increased prominence of the sensuous side of the art.

The art of the twenty-first dynasty was remarkable for the feminine intricacy of its finish. The lyre played by women had completely banished the small harp from the orchestra, and the great harp was now being distorted into the triangular form. In the twenty-second dynasty the capital was removed to Bubastis, the most luxurious city in Egypt, and it is a sign of the times that the popular deity of the people was now a goddess. Of orchestras we no longer hear mention; they had been supplanted by dancing-girls and tambourine-players. The great harp had become a mummy, like its masters, and the attention of the musical world in Egypt was concentrated on a newly invented instrument—the treble flute.

If the flute owed its origin to the amorousness of primitive man, there was considerable reason for its supremacy at present; for the orgies of Bubastis had now become matters of wide notoriety. There is another point about this flute, which may give us an additional reason for the demise of the old harp—it was chromatic. Here, then, is the break-up of the

Egyptian orchestra accounted for. The harp could only play a diatonic scale, and as long as the people were simple-minded enough to be contented with such simple melodies and harmonies as the diatonic scale could give, so long was the Egyptian orchestra possible; but directly the jaded taste required a new and more pungent stimulus, and the chromatic scale came, then great harps, small harps, and even the effeminate lyres, could no longer play the fashionable music, and the orchestra collapsed in consequence.

Let us pass on to the last stage of Egyptian music as we find it under the Ptolemies. In those days the Egyptians were accounted the greatest musicians in the world. Every man in Alexandria could play the flute and lyre, the flute always being the favorite instrument. The most untiring efforts were made to attain dexterity on it; bandages were bound round the cheeks to counteract the strain on the muscles, and veils were worn by the crack players to hide the contortions of the countenance. Through all grades of society, even to the king, ran this mania for flute-playing. And this is the last we hear of ancient Egyptian music.

One word more, however, should be added. Looking further into it than we have done, we shall find that there was a certain section of Egyptian life where music was allowed air, and where it was unpatronized and free. In the temples of Thebes, Memphis, Arsinoë—those twilight retreats of a sublime pantheism—amid clouds of incense and the flash of gold and white robes, was heard the music which might have been Egypt's, had Egypt been free—crowds of priests winding along the aisles of sphinxes, and chanting the

praises of him who lives for ever and ever, God of the evening sun, God of the morning sun, bright Horus. There was the pulse of Egypt's spirit. But the religious music, like the religion itself, never spread its influence among the people at large.

For the rest, if we would find the exact contribution of Egypt to the general history of music, we must find it in the mechanical excellence of its instrument-makers, under whose dexterity and skill the harp gained sufficient power to be able to be played as a solo instrument. Everything else has perished, but the solo harp has remained.

CHAPTER VI

THE ASSYRIANS

The War Music of the Assyrians—Character of their Bands —Love for Shrill Sounds—Assyrian Dulcimers.

BY contrast with the music of the Egyptians, the music of the Assyrians was essentially martial. Drums, trumpets, and cymbals brayed and clashed in the Assyrian concerts. We must cease to talk of orchestras now, and speak of "bands" instead, for we are to speak of a music in which we seem to hear the war-horse neighing. The whole spirit of it seemed to come from the armies; the players, grouped in concise bodies and arranged in lines, have all the air of marching bands; the instruments, too, were all portable, strapped to the body or carried in the hand, the harps all so small that they could be held in the hand, the dulcimers strapped to the shoulders, and the drums strapped on the chest. The beating of time in the concerts was not by clapping the hands, but by stamping with the foot—as if learned from soldiers marching.

That a love for shrill sounds should be joined to this love of martial effect was but natural. The Assyrian bands were remarkable for the preponderance of the treble. The harps could scarcely contain any notes below alto compass. Of the other instruments, which were the lyre, the lute, the dulcimer, the flute,

the double pipe, the trumpet, the single pipe, there is not one which is not small in make and probably treble in pitch, with a similar compass, no doubt, to that of the lyre-shaped harp. Agreeably to the composition of the instrumental portion of their bands was the composition of the vocal element, which was supplied principally by women and boys; that is to say, by treble voices. Eunuchs also are frequently found among the singers. There is no imagining any harmony in the music, which must have been an air in octaves, with all the stress on the high octave. The instrumental bands were analogous in their composition to the vocal choruses; nearly all the instruments were soprano, those of the bass and tenor order being rarely employed. To take off the edge of the disproportionate treble element the Assyrians employed loud instruments of percussion like the drum and cymbals.

But more than all other instruments, the dulcimer, their favorite, is a remarkable testimony to the nature of Assyrian music. The dulcimer, indeed, was such a favorite with the Assyrians, that it appears on the bas-reliefs twice as often as any other instrument. And of this instrument, which we must especially notice since it is the undoubted parent of the modern piano, there were two kinds, one of a horizontal form, with the strings lying flat, and the other of a vertical form, with the strings strung upward, but above one another; the first an exact model of our grand piano, the second not quite so good a one of the upright, because the strings were strung one above another instead of side by side.

These instruments had ten strings on an average, though sometimes one or two more are found, and

sometimes less. They were strapped to the person, like so many of the musical instruments of the Assyrians, and being small, sat most conveniently to the figure, and allowed the player the greatest freedom of motion. Of the two kinds of dulcimer, the vertical is much the commoner. The player struck the strings with the rod which he held in his right hand, and used his left hand at the same time as a damper for the lower strings, in order to prevent their sounds running into one another, by which we may conclude that the music was as a rule very rapid, since in slow music the sound of each string would have died away in time.

CHAPTER VII

THE HEBREWS

The Minstrel Poets—The Prophets—The Form of the Hebrew Music, Elucidated by an Analysis of the Poetry—Hebrew Music at the Time of David—Music in the Schools of the Prophets—Rabbinical Traditions, etc.

THE Hebrews were lacking in feeling for the sensuous and artistic side of life, but they exalted its spiritual side to a wonderful height. Unlike the Assyrians, the beauty of whose carvings has seldom been surpassed, the Hebrews not only despised sculpture, but accounted it irreligious. Painting fared no better with them. Architecture was so poorly represented that Jahveh's tabernacle was for centuries a tent, and Solomon had to hire a foreigner to build the temple. Equally deficient were the Hebrews in dramatic genius. The one outlet by which their wild formless emotion could find a congenial vent was in the passionate outbreaks of lyric poetry and extemporized song.

It is here, therefore, that we must look for the import of the Hebrews in musical history. Their relation to instrumental music is a purely subordinate one, and scarcely merits remark. They had but few instruments, and of these all but one were borrowed from other nations, principally, it should seem, from the Egyptians. There was not a drum to be found from Dan to Beersheba, nor a dulcimer either; and

flutes, if used at all, were very rarely used. The only instrument that attained much favor, and this was the indigenous one, was the harp, which should more properly be described as a lyre than a harp, since it was a small portable instrument which the player carried about with him wherever he went. This little lyre was the great instrument in Israel, and the reason it could be so was that the music of the Hebrews was in every sense of the word a vocal music. The voice transcended and outdid the instrument, and instrumental development stood still. With the Hebrews, therefore, we pass from the heated atmosphere of bands and concerts to a far higher and purer air, and the center of interest directs itself to a single typical figure, the minstrel poet.

To "prophesy" meant to sing, and there is little doubt that Isaiah, Jeremiah, and others like them, uttered their prophecies in song, no less than in verse, both alike being extemporized. To such men as these music could never be an art—it was a form of speech, closely knit up with poetry. It is most probable that the use of an instrument for accompanying was only occasional. Their song, no less than their verse, was purely unpremeditated, being in the first instance the same impassioned speech which we have noticed as the original of song among primitive men; but with the Hebrews this impassioned speech received a very peculiar development from the parallelism of sentences in which their language delighted. The effect of this was to divide every poetical expression into two similar or contrasted parts, and the music which accompanied the poetry naturally received this arrangement likewise. This peculiarity of structure may still

be noticed to-day in the religious chant of our churches, and while the patriarchs were living in the plains of Mesopotamia it had begun:

Adah and Zillah, hear my voice: Ye wives of Lamech, hearken unto my speech.
For I have slain a man to my wounding: And a young man to my hurt.
If Cain shall be avenged seven fold: Truly Lamech seventy and seven fold.

That Lamech, the poet, should be the father of Jubal, the minstrel, is natural, and that the minstrelsy which arose in company with such a form of poetry should wear the same peculiar stamp was also to be expected.

The plain result of the establishment of such a form of poetry and song was this: When the minstrel of the old patriarchal times gave place to the choruses of city life, the division of the verse into two parts, each reflecting the other, would obviously suggest the division of the chorus into two parts, each responding to the other, as, for instance, the men to the women, or two companies of women, or it might be a solo-singer and a chorus.

That this style was developed in the city life in Egypt we may imagine, since the first mention of it in the Bible is immediately after the passage of the Red Sea, when "Miriam, the prophetess, took a timbrel in her hand, and all the women went out after her with timbrels and dances. And Miriam *answered* them:

Sing ye to the Lord, for he hath triumphed gloriously:
The horse and his rider hath he thrown into the sea.

The latter half was probably the response of the

women. We may conjecture that the other song which immediately precedes this, sung by Moses and the children of Israel, was treated in a similar manner, and that the parts were distributed thus:

Moses. I will sing unto the Lord, for he hath triumphed gloriously:
Children of Israel. The horse and his rider hath he thrown into the sea.
Moses. The Lord is my strength and my song:
Children of Israel. And he is become my salvation.
Moses. He is my God, and I will prepare him an habitation:
Children of Israel. My father's God, and I will exalt him.
Moses. The Lord is a man of war:
Children of Israel. The Lord is his name.
Moses. Pharaoh's chariots and his host hath he cast into the sea:
Children of Israel. His chosen captains also are drowned in the Red Sea.

If we were to write a history of the Hebrew chorus from that time till the time of the Captivity, it would be but to enumerate the various occasions on which such performances are chronicled in the Bible, and the various personages who took part in them. For instance, in the services of the tabernacle, the priests formed one chorus, the Levites the other. Miriam and her women find their parallel in later times in the two choruses of women who came out to meet David after his victory over Goliath, one chorus singing, "Saul hath slain his thousands," the other answering, "And David his ten thousands"; and while Miriam and her damsels only used timbrels to accompany their voices, the women who went to meet David employed not only timbrels but also other instruments of music, so that there would be a distinct advance in musical feeling to chronicle here. It will be found to have had very important effects indeed, since not only

would it imply two choirs of singers, but also two bands of instrumentalists, and very likely would affect the internal arrangements of the temple itself, on which we are left to speculate, in necessitating two rows of seats facing one another. That this was the arrangement in Solomon's temple we may judge from the arrangements in Nehemiah's time at the ceremony of the dedication of the wall of Jerusalem, which probably partook of the nature of the temple service.

It should seem that there were two choirs of Levites —or possibly one of priests, the other of Levites— stationed opposite one another at either side of the temple, who sang in antiphon the psalms and canticles which went to make up the service. The singers were flanked by instrumentalists, composed in like manner partly of priests, partly of Levites, who each had their peculiar instruments; for while the Levites had cymbals and psalteries and harps, the priests had trumpets—an instrument which appears to have been exclusively reserved for them. Appearing in its oldest form as a trumpet of ram's-horn, by the time we are speaking of it was made of brass and gold.

We are not to think of any elaborate harmony in the Hebrew temple services, such as characterized the performances of the Egyptians. To the Hebrews, music was not an art, but a voice in which they poured forth their soul to Him "that inhabited the praises of Israel." "The singers and the trumpeters were as *one* to make *one* sound to be heard in praising and thanking the Lord." "One hundred and twenty priests blowing with trumpets"—a scream of sound! Harshness is forgiven to that enthusiasm which so wrestles for expression, and sees heaven open before its eyes.

The reign of David is an idyllic episode in the history of Israel. The sternness of the national temper is seen much softened in him, and in thinking of the minstrel king we are apt to forget that we have before us the rare and short-lived bloom which appeared but once or twice on Hebrew history. We gain a truer conception of the features which were likely to dominate their music by thinking of the prophets of old, Moses, Joshua, Samuel; by remembering the harshness of the Hebrew language, with its abundance of aspirates and sibilants and gutturals, its plethora of consonants and feebleness in vowels. Their chants and psalms we must imagine they intoned or recited in an elevated voice, with but little to distinguish the delivery from ordinary recitation, except the monotony of the tone and the markedness of the cadences.

During this time the Levites, who were these regular singers, were suffered to become completely disorganized, and eventually to degenerate into a half-mendicant order wandering up and down Israel, and dependent for their bread on the hospitality of chance entertainers; nor was it until the time of David that they were restored to their former position. That this restoration of the Levites should take place under the minstrel king was natural, and, generally speaking, as we have remarked, in David's reign there are everywhere signs of a musical renaissance, and for the first time the conception of music as an art begins to appear. To the same period also we must refer the establishment of those schools of the prophets in which music and poetry were the leading subjects of instruction. Standing out as these men did in bitter

opposition to the tendencies of the age, and as embodiments of that ascetic spirit which was now beginning to wax faint in Israel, it was natural that they should inveigh against the art of the court life, which could seem to them little better than effeminate trifling. Even the temple services did not escape their invective. "The songs of the temple shall be howlings," says the prophet Amos. And in him and others like him spoke the real spirit of the Jewish people, which is doubtless the reason why they were tolerated and respected. If we would follow the track of the purely Jewish music, we must turn from the courts of Jerusalem and Samaria to these very schools of the prophets, secluded in the mountain fastnesses of Gilead or Bethel.

The prophetic ecstasy was doubtless necessary in a greater or less degree for the attainment of all prophecy. And since one of the features of all high spiritual exaltation, and particularly of this prophetic enthusiasm, was the morbid acuteness of the hearing, we may easily suppose that the prophetic ecstasy should be frequently brought on by music. The fact of all prophecy being delivered in the form of chanted verse will at any rate show how essential an element music was to the visionary condition of the consciousness.

If we turn to Saul we shall find what prophesying in its most exalted form actually was, for in his exaltation "he would tear off all his clothes, and lie stretched on the ground for a night and a day together." The condition of a man under the ecstasy, said Montanus, was like that of "a lyre swept by the plectrum." He was unconscious of what he said or did.

Numerous are the miraculous effects that have been ascribed to music by rabbinical tradition, but to suggest that the high estimation which the art enjoyed in Israel was in any way due to its supposed miraculous virtues would be to go too far. The Hebrew minstrels would never have risen above the social status and importance of their brethren in other lands, had not their subject been the noblest that man can aspire to sing of, and had it not been in such thorough harmony with all the highest feelings of their nation. These poets of God sang the praises and the might of God to a nation intoxicated with Deity, and this is why the fame of the brightest minnesinger shrinks to a speck before the majesty of Isaiah.

CHAPTER VIII

THE CHINESE, INDO-CHINESE, AND OTHER MONGOLOIDS

The Chinese Scale of Nature—The Scale of the Seven Substances—The Music of Drums, Bells, etc.—Legends of the Origin of Music in China—The Chinese Musical System—Similarities in other Music of the East.

TO the Chinese mere sensuous delight in tone presents such attractions that their musical system is occupied mainly with the analysis and classification of the different qualities of sound, and only secondarily with those sequences of sounds which we call notes.

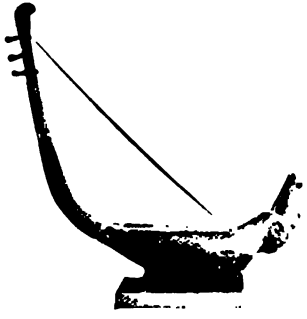
According to the Chinese, there are eight different musical sounds in nature, each possessing a well-marked character peculiar to itself.

There are: the sound of skin, the sound of stone, the sound of metal, the sound of baked earth, the sound of silk, the sound of wood, the sound of bamboo, the sound of gourd.

Nature having so contrived, man has treated these substances for his own use, and has fashioned skin into drums, stone into cymbals, metal into bells, baked earth into horns, silk into lutes, wood into castanets and vibrating instruments, bamboo into flutes, gourd into mouth-organs.

The sound of skin has eight varieties, and there are therefore eight different kinds of drums, which vary in minute points of construction, as in having a longer

Old Irish. Height, 52 in.; width. 43 in.



Ancient Egyptian

HARPS

French, abt 1770. Height, 63 in.; width, 30 in.

or a fuller barrel, or in general bulk, or even in the method of beating; for the eighth variety has two different names, according as it is struck by the right hand or the left. This eighth variety has another peculiarity; for while the others give the sound of skin alone, this qualifies the sound of skin with the sound of rice, which is a subordinate sound of nature, and does not come into the universal gamut. The barrel of the drum is filled with the husk of rice, which has been beaten from the grain in a mortar, and by this means the sound of the rice is united to that of the skin.

The sound of stone is extolled by Chinese theorists as one of the most beautiful of all the sounds. It is said to give a sound midway between the sound of metal and the sound of wood, "less tart and rasping than the sound of metal, much brighter than the sound of wood, more brilliant and sweet than either." To make the stone instruments, of which there are two varieties, the tse-king and the pien-king, both being comprised under the general name king, the stone is sliced into thin plates, about the size and something of the shape of a carpenter's square. The term "cymbals" is misleading, for the stones are not clashed together, but struck like drums with a mallet. The bells likewise present a similar discrepancy with ours, being not rung with a clapper inside, but struck on the outside like the drums and cymbals with a mallet. The cymbals are of various sizes, according to the note they give, are arranged sixteen together on a frame, and played as we should play a dulcimer. When one of them goes out of tune, it can be flattened by taking a thin slice off the back, or sharpened by cutting a

piece off the end. In the year 2200 B.C. we read that the Emperor Yu assessed the various provinces in so many stones each, which were to be taken in part payment of their regular tribute. These stones were destined for the palace instruments.

The sound of metal has three varieties, and consequently there are three kinds of bells manufactured to produce it—the po-chung, the te-chung and the pien-chung. Of these, the po-chung is the largest, and gives the richest tone; and the pien-chung the smallest, and produces the most piercing. The te-chung comes midway between the two. The small bells, however, are of more importance in Chinese music than the large ones; for while the large ones are only used occasionally in a piece, the small bells are arranged in sets, and are played solo. There are sixteen bells in all, hung by hooks to two cross-beams on a frame, eight on the top cross-beam, and eight on the bottom one, each bell giving one of the notes of the musical scale.

The sound of baked earth was first extracted by striking a flat piece of baked earth against some hard substance; but the sound thus produced was very unmelodious and harsh. The next attempt to extract it was by infringing on the domain of the drum, and stretching a piece of tanned skin over a vase of baked earth. These vases of baked earth were made in the shape of drums, and struck with drumsticks. These and similar experiments proving unsatisfactory, it was decided to attempt the extraction of this sound from an instrument of wind. A certain quantity of earth was therefore taken, the finest that could be procured. It was made still finer by washing it in

several waters, and then worked into the consistency of liquid mud. Two eggs, one of a goose, the other of a hen, served as the models, and the liquid mud was thrown over these and allowed to set. Then the egg on the inside was broken and picked out, and an exact mold of the egg remained. The opening made at the end for the purpose of extracting the egg was next enlarged to serve as a mouthpiece, and five holes were pierced in the bowl, three on the front, and two on the back. Five musical notes were now possible, each giving the desired sound of baked earth.

The sound of silk has two leading varieties and seven minor varieties. It was produced by twisting silken threads into cords and twanging them with the fingers. Little by little it came to be noticed that the sound of silk gave definite musical notes. The cords were then pegged down on a flat board, and the number of threads in each cord counted, so as to preserve the note unaltered for the future. The board was gradually curved to bring the strings nearer together, and the number of strings was limited to seven, which gave the gamut. Of the instrument thus formed, which is called the kin, there are three varieties, and it is one of the most esteemed in China. The other instrument which gives the sound of silk, called the che, used to have fifty strings, but now has twenty-five. Each string has its own separate bridge, so that there are twenty-five bridges. In this instrument the sound of silk attains its greatest perfection; "its sound far excels that of any European clavichord," says Amiot. Nevertheless, the seven-stringed kin is more esteemed in China, probably in deference to its antiquity, for it is much the older instrument of the two.

The sound of wood is given by instruments which are the strangest of all. One has the shape of a bushel, another of writing-tablets, and the third of a tiger.

The sound of gourd went through somewhat similar experiences to the sound of baked earth, for there were many unsuccessful attempts to extract it before a satisfactory result was attained. It was found necessary to trench on the sound of wood and the sound of bamboo to aid the sound of gourd. Bamboo is by nature the most musical of all substances, for the hollow tubing between one knot and the other, the distance between each knot, and the proportions of the distances, the hardness of the cane, etc., all seem to invite man to blow into it, and the instruments made of bamboo were by consequence the earliest that were invented, and served as pitch-pipes for tuning the other instruments, especially those of silk. The instruments of bamboo are pan-pipes and various kinds of flutes. The instruments of bamboo attain a technical importance above the instruments of all the other seven substances; for not only does the bamboo pan-pipe regulate the tuning of the other instruments, but the succession of sounds which it gives serves as the foundation of the Chinese scale.

It was in the reign of Hoang-ty, runs the legend, that the famous musician Lyng-lun was commissioned to order and arrange Chinese music, and bring it from being a confused array of sounds into a regular system. Without knowing how to proceed with his task, Lyng-lun wandered, deep in thought, to the land of Si-joung, where the bamboos grow. Having taken one of them, he cut it off between two

of the knots, and, pushing out the pith, blew into the hollow. The bamboo gave forth a most beautiful sound. It happened that this sound was in unison with the sound of his voice when he spoke; and at the same moment the Hoang-ho, which ran boiling along a few paces off, roared with its waves, and the sound of the great river was also in unison with the sound of his own voice and the sound of the bamboo. "Behold, then," cried Lyng-lun, "the fundamental sound of nature! This must be the tone from which all others are derived."

While he was musing on this, the magic bird, Fung-hoang, accompanied by its mate, came and perched on a tree near and began to sing. The first note it sang was also in unison with the sound of the Hoang-ho, and with the voice of Lyng-lun, and with the sound of the bamboo. Then all the winds were hushed, and all the birds in the world ceased singing, that they might listen to the song of the magic bird, Fung-hoang, and its mate. As they sang, Lyng-lun, the musician, kept cutting bamboos and tuning them to the notes of these magical birds, six to the notes of the male, and six to the notes of the female, for they each sang six notes; and when they had done singing, Lyng-lun had twelve bamboos cut and tuned, which he bound together and took to the King.

The bamboos gave the following sounds when they were blown into: f′, f′ sharp, g′, g′ sharp, a′, a′ sharp, b′, c″, c″ sharp, d″, d″ sharp, e″.

The six notes with the odd numbers were given by the male bird, and those with the even numbers by the female. Each pipe received a name, and the notes given by these pipes constitute the scale of the

Chinese, which, according to Chinese mythology, originated in the manner described.

It is hard to imagine that the Chinese bestow much attention on the actual notes that are struck or sounded—as little, perhaps, as they do on the actual forms and figures of their painting—and so their music is best described as a fanciful play with sound, as their painting is a play with colors. If this is the attitude of their musical sense to their music, we shall now have an explanation why their musical system should be taken up primarily with classifying qualities of tone, and only secondarily with notes.

When we think of the instruments themselves, it would seem as if they were not merely made to gratify the ear with their tones, but in quite as great a measure to please the eye with their form and their colors. The stones, for instance, of the stone organ, which is perhaps the typical instrument of China, are sorted in degrees of excellence, more out of regard for their colors than for their qualities of tone. They say that certain timbres go with certain colors, and profess to recognize the flavor of a tone by the color the stone has; but this looks like an afterthought, and as if the stones were ranked in order of excellence primarily on account of their colors, for certain colors would please the eye more than others. The stones are worked into all sorts of patterns.

The characteristics of Chinese music repeat themselves in the music of the Indo-Chinese and other civilized Mongoloids of the Old World, and we may say generally that the music we have been describing just now is the music of the whole of Southeastern and Eastern Asia.

CHAPTER IX

THE PERUVIANS AND MEXICANS

Music in Peru at the Time of the Conquest—Peru the Home of the Flute—Contrast with Music of the Mexicans—Mexican Instruments of Percussion and Wind—The Public Dances.

THE most beautiful songs in ancient Peru were those which the reapers used to sing in the maize-fields as they were cutting the crops of the Inca. Whether they were reaping or binding up the sheaves, all the motions of their bodies were in time to the measure of their songs. Except a few of the very best love-songs, there was nothing that could equal these reapers' songs.

The Peruvians, as a rule, were not great singers. "In my time," says Garcilasso, "the people of Peru never sang at all, but they used to play their songs on the flute instead, which came to much the same thing, for the words of the songs being well known, and no two songs having the same tune, the melody of the flute immediately suggested the words to the mind." Flute-playing, it appears, had put singing quite out of court in Peru in Garcilasso's time, and while it had always been in high favor there, just before the conquest it amounted to a positive passion.

There could be no better commentary on the national character than this perpetual flute-playing, which is always a sign of effeminacy; and that the

home of the flute should surrender without a blow to Pizarro is only what might have been expected. The flutes which the Peruvians played upon had four or five stops, and were often wrapped in embroidered needlework. The reason the stops were so few was that only songs were played on the flute, and five stops, which gave the complete vocal scale, were therefore sufficient. In the same way many of their pan-pipes only sounded the five-note scale, so that probably the pan-pipes were also used to play the melodies of songs. But most of the pan-pipes were tuned to a fanciful instrumental scale: e′, f′, f′ sharp, g′, g′ sharp, a′, c″, c″ sharp, d″, e″, f″, a″, and these would no doubt trifle with sweet sound and play music not unlike the instrumental music of the Chinese. The Peruvians were such skillful players on the pan-pipe, and delighted in the instrument so much, that they used to form bands of pan-pipes alone.

The idyllic music of Peru is a great contrast to the music of Mexico, where barbaric pomp and joy in the roar of sound reappear again. Copper gongs, copper rattles, conch-shells, trumpets, drums, cymbals, bells, bell-rattles, rattle-organs—these were the instruments the ancient Mexicans delighted in. If the music of Peru was founded on the flute, the music of Mexico was founded on the drum. The Mexicans developed the drum in a manner quite peculiar to themselves. It was an instrument of melody with them, as it is with the Chinese, the Burmese, etc.; but instead of resorting to the somewhat clumsy contrivance of combining a number of separate drums to produce the melody, the Mexicans had discovered how to elicit different melodic notes from the same drum. This

they did by the use of vibrating tongues. In the top of the drum, which was an oblong, trough-shaped block of hollowed wood, they made two long incisions, one at each side, reaching nearly the whole length of the drum, and then a cross slit from one to the other. This gave them two tongues of wood, which were tuned c to e, c to f, c to g, and some c to e flat.

These tongued drums were called teponaztlis, and had a very deep tone. When they were played with other instruments, they served as the double bass. But they were also played solo; for teponaztlis of various pitches might be so arranged as to play a consecutive melody between them, much as the Peruvian pipe-players did with their pan-pipes.

The great drum of the ancient Mexicans was called veuetl, and it could be tuned to any pitch by tightening or loosening the drumhead. The copper gongs were struck with copper drumsticks, but the drums with drumsticks tipped with india-rubber. They had musical stones like the Chinese, but they used them in a different way, clashing them together like cymbals. The copper rattles were made like small oil-flasks, the neck being the handle, and the rattle itself filled with small stones. Sometimes these rattles were made of silver, and sometimes of pure gold. Strange instruments were the Mexican rattle-organs, of which there were two kinds—the small rattle-organ and the great rattle-organ. The second, of which the first was only a diminutive copy, consisted of a board twelve feet long and a span broad, on which were fastened, at certain intervals, round pieces of wood something of the shape of drumsticks, and when the board was moved these pieces of wood rattled against one another.

The variety of external form which the Mexicans gave to their instruments was very great. They made their whistles in the shape of birds, frogs, men's heads; their teponaztlis, even the ordinary ones, were covered with carvings. But those used in war were cut in the figure of a man crouching on his knees; his back was the drum, and he had eyes of bone, beautifully braided hair, earrings, necklaces, and boat-shaped shoes on his feet, all carved in a mulberry-colored wood, and highly burnished. The tambourines were constructed in the form of a snake biting a tortoise's head.

The Mexicans had rattles made in the shape of a snake crushing a toad in its coils—instruments very much like the Chinese egg-flutes, which were flageolets with two mouthpieces, giving a bass and a treble at the same time; and pipes and rattles combined in the form of three human heads supporting a pedestal, the pedestal being the pipe, and the heads, which were filled with stones, the rattles.

A highly plastic and sensuous music we might expect to find among such an artistic people, and such the Mexican music eminently was. In the vocal music, "meter and cadence were attended to most fastidiously." Perfect time, perfect unison, are the invariable eulogies passed on the Mexican music, and it is quite in keeping with such a character that dancing was its constant attendant. The Mexicans were the greatest dancers of the world. The princes, the nobles, and the elders of the city, all joined in the public dances with the women and little children. Mendieta describes five thousand dancing at once in two rings, both whirling round, but the outer one going at

double the pace of the inner one, composed of elders and others who moved with deliberation and dignity. In the center of all were the drums, teponaztlis, and veuetls on mats. These were beaten in time to the dance and the song. After a while the children of the nobles came running in—little creatures of seven and eight years, some only four or five. These danced with their fathers, and began to sing the song in a high treble. Then the women joined in, and the musicians blew trumpets and flutes, and whistled on bone whistles. Meanwhile, the two rings were whirling round and round, never stopping or slackening for an instant.

CHAPTER X

THE ANCIENT ARYANS

The Vina—The Aryan Bards—Composition and Performance of Their Hymns.

WHEN we first hear of the Aryans they were on the frontiers of India, and lived in the simplicity of the patriarchal state. The musical instrument which they used was called the vina or been. It was a lute of more highly developed form than the primitive lyre which was the ancient national instrument of the Mediterranean races, for the flat board had by this time been considerably curved—not longways, but broadways, until it resembled the segment of a water-pipe that has been cut in two. Then another similar board had been attached underneath, and so the frame came to resemble a pole—this hollow pole furnishing an excellent sounding-board. For a similar purpose two gourds were fastened, one at each end of the pole underneath, each about as big as a melon.

This was the chosen instrument of the Rishis, a class of holy bards in ancient India, who were not unlike the bards and minstrels of the Hebrews. They were said to be under the special protection of Heaven. "Indra loved their songs"; "Agni bethought him of their friendship." They were "the sons of Agni," "the

associates of the gods," "they conversed about sacred truths with the gods of old." They were considered more venerable than the priests themselves.

It was their office to compose the hymns sung at the sacrifices, and to their tuneful lutes the Vedas saw the light. The worshipers joined hands about the altar, and moved in a slow religious dance round and round while the sacrifice was consuming. The length of the hymns was determined by the natural phenomena to the celebration of which they were devoted. Thus the hymn to the goddess of the dawn was commenced when the first streaks of light began to whiten the sky, and ended before the sun appeared. The hymn to the sun began when the tip of his disk showed above the horizon, and was finished when the entire circle was visible in the sky.

The composers of the hymns were credited with supernatural powers, and no greater honor could be paid, even to a god, than to bestow on him the epithet of bard. The myth of the Word admirably exemplifies the power of language and song over the ancient Aryan mind. They fabled how the Word walked in heaven before the gods were there. The subtlety of a later age added a pendant to this legend: how the Word escaped from heaven and hid among the trees, and how her voice was ever after heard in the lutes that were fashioned from their wood.

Thus these ancient singers, the Rishis, passed among the Aryan tribes with their inspired hymns. The number of the Rishis was sometimes given as seven, sometimes as nine, while Manu, the great mythical sage of India, speaks of ten.

CHAPTER XI

THE GREEKS

Homer and the Minstrels of his Day—Reforms of Terpander—Sappho—Cultivation of Song—Greek Musical Notation—The Enharmonic Genus—Olympus and the Phrygian School of Flute-playing—Stringed Instruments in Use in Greece—The Lyre—Wind Instruments—Greek Dances—The Choral Music of Greece.

VERY low was the estimation of the bard in those Ionian cities of Asia Minor where Homer sang; the bardic age had been followed by a heroic age, in which strength, not art, was the object of man's reverence. It was on the skirts of this heroic age that Homer lived, like other minstrels of his time, poor and despised.

It is a matter of tradition that the lyre to which Homer sang his poems had but four strings. It was customary to strike a few notes on the lyre as a prelude to the song, but not to employ it during the song itself. Homer is believed to have been the first who combined short songs or rhapsodies into one long poem. We may perhaps believe that he sang the "Iliad" and the "Odyssey" entire before he died, as we know they were sung in their entirety in later times, but with greater pomp. In later times the minstrels sat crowned with laurels and arrayed in gorgeous dresses, the "Iliad" being sung in a red dress, and the

"Odyssey" in a violet one. Homer sang them in a beggar's gown. A boy would lead him into the center of the hall, and seat him on a stool in the midst of the banqueters, and taking down a lyre from a peg would place it in his hands. He would run his fingers over the strings, turn his sightless eyes heavenward, and begin to sing.

A long roll of minstrels extended from the time of Homer until the days of Terpander—a musician whose reforms are universally acknowledged by the Greeks as the starting-point of their later and more elaborate art. His first innovation was the separation of the prelude from the recital which followed it, and its constitution as an independent piece of music. Next he added words to the instrumental part, creating a new and terse musical form, containing pleasing melody. His next reform was the regulation of tune, presumably by a system of musical mnemonics.

The construction of the Dorian mode is likewise attributed to Terpander by the Greek musical historians. Probably this so-called construction consisted in joining the Æolian and Dorian modes, which in their earliest form existed as independent tetrachords. The Æolian mode—the oldest in Greece—was precisely identical, except in the omission of the lowest note, with the five-note scale of the Chinese and other nations, and that primitive and original scale of uncivilized man which we call the isolating scale. It had a break in the middle, and the notes which composed it were a, b, d′, e′. The union of this with the Dorian tetrachord—the four notes from e to a below—produced the Dorian mode in its earliest form, or, as it is more generally called, "the scale of Terpander," ac-

cording to which all lyres in Greece until the very latest period were tuned.

Singing, thus released from trammels, attained its perfection in Greece under the Lesbian school of musicians, founded by Sappho, who has been credited with as many improvements in Greek music as Terpander made. The invention of the Mixolydian mode has been assigned to her; likewise the introduction of the plectrum, with which the strings of the lyre were struck, besides numerous reforms in the measures of Greek song. Her life as the president of a college of women devoted to the cultivation of music and poetry has been well depicted by Maximus Tyrius.

The law of melody at that period of Greek art was this: Every note must be either equal to its fellow or double of it. The song of the singer, therefore, proceeded tranquilly along, while variety of expression on the part of the vocalist was secured by the application of certain graces. The principal grace was the prolepsis or slur, which consisted in singing one syllable to two notes. The prolepsis might occur in two ways. It might be *di grado* or *di salto*. The procrusis consisted in skimming lightly over two short syllables, and bringing the full emphasis on the long one. The kompismus or "saucy grace" was the staccato. The melismus was the "connected staccato."

That which we now regard as the dream of theorists, and an ideal beauty or delicacy which can never be realized in practice, was an everyday thing with Greek singers; namely, the enharmonic genus, or the correct intonation of quarter-tones. We have caught a gleam of its existence among primitive men, but only for a moment, for it soon vanished away, being but the

spangles which speech flung off in its passage to song, and scarce destined to outlive the transit. Directly song began, by benefit of the chant, from that moment did the diatonic scale begin. As harder things will always give way to easier ones, so did the enharmonic pass away before the bold and simple diatonic song.

The Greek enharmonic divided the semitone, where it occurred in the scale, into two enharmonic demitones, which were preceded downward and succeeded upward by the interval of a major or minor third. Strange and unmelodious as it may appear to us, the enharmonic was esteemed one of the greatest ornaments of music. Nor was its compass ever extended so as to subdivide all the notes of the scale, but was limited to the partition of the semitones.

The honor of introducing the enharmonic into Greek music is universally attributed to Olympus, a Phrygian flute-player. Olympus came playing the flute from Phrygia to Greece. His flutes wept as he played them, by virtue of this beautiful mode. Romance and sentiment began to color the white light of the Greek music. The Phrygian satyr, Marsyas, whom Apollo had vanquished and crushed, lived again in the beautiful Olympus, who founded a school of flute-players in Greece.

We must now consider what effect dissemination of the enharmonic would have on the make and structure of the Greek instruments. It would plainly lead to an increase in the number of their strings or stops. The chief stringed instrument at this period was the magadis—a lyre with a bridge across the middle of its strings, so that the notes could be sounded in octaves.

The strings of the magadis under the influence of the enharmonic were tuned: a, b flat, b, b sharp, c′, d′, e′, e′ sharp, f′, g′, with the octave below for each tone.

The pectis and barbitos, which were smaller varieties of the magadis, possessing five strings apiece instead of ten, were tuned: the pectis, e′, e′ sharp, f′, g′, a′, and their octaves below; the barbitos, b, b sharp, c′, d′, e′, and their octaves.

Doubtless similar concessions to the enharmonic were made by others of the numerous instruments which between now and the times of Sophocles were invented or introduced from various quarters into Greece. Of these we will now mention and describe some of the principal: The scindapsus was a high-stringed instrument to accompany women's voices. It had a willow frame, and was very light to hold. The enneachordon had nine strings, as its name implies. The phœnix and the lyrophœnix were plainly the Phœnician lyre, introduced as a novelty from Phœnicia. Ibycus, the poet, has the credit of introducing the small Egyptian triangular harp, the sambuca, at this period. It became notorious in later times as the instrument of the courtesans. The spadix was such another—a woman's lyre—and had the reputation of being an effeminate instrument. The epigonion was a great lyre of many strings, invented by Epigonus of Sicyon. The simicium was likewise a large lyre. The monochordon was a one-stringed lute introduced from Arabia. The primeval bin or kin was introduced as a curiosity from foreign parts, and the story current to account for its simplicity of shape was to the effect that it was made by the Pygmies, who lived on the shores of the Red Sea, out of the laurel that grows there.

The trigonus and the heptagonon were foreign instruments, of which the former was triangular, and the latter seven-sided. All the rest of these instruments, except the sambuca, had been assimilated more or less closely to the shape of the national lyre. For the lyre was the king and sovereign in Greece, and despite this crowd of interlopers still held its own. Its shape had not altered, nor had its strings been increased, since the time of Terpander.

And since the lyre has so glorious a race to run, and young Apollo played it, we may well pause to describe it minutely and relate with care its every part. Let us preside at its making. Hermes, walking by the sea-shore, found a tortoise, and he killed it, and made the shell empty. Then turning to some reeds that were growing near, he cut pieces off them, all of a length, and, drilling holes in the tortoise-shell, put these pieces of reed through, pushing them into the body of the shell, for they were to serve as blocks to take off the strain from the shell. He next covered the shell with a piece of bull's hide, and fastened two horns to one end of the shell, one on each side. Then he fixed a piece of wood to be a crosspiece, from the tip of one horn to the tip of the other, tied seven strings of gut from the crosspiece to the bottom of the shell, and the lyre was complete.

In later times some additions were made to this form, and one or two variations. The additions were pegs in the crosspiece, to fasten the strings to; a bridge to prevent the strings touching the shell; and two sound-holes cut in the shell, in order to add to its resonance. The variations were in the materials of which the body of the instrument was made.

The lyre reigned supreme in Greece itself. But there was one Greek city which was an exception to the rule. And this was the luxurious city of Sicyon, where the women were the handsomest in all Greece. Sicyon, the mart of Asiatic merchandise, and the Sicyonians, accustomed to the pomp and luxury of their merchant princes, could not be content with the simplicity of the lyre, nor with the smallness of its tone. They preferred and delighted in a variety of lyre called the cithara, whose horns were broader and hollowed out to act as sound-boards, and the belly of which was larger and broader. These two variations were plainly introduced for no other object than to increase the resonance of the strings. The cithara, from Sicyon, spread through Greece, and gradually attained wide popularity; but only the great and illustrious singers could employ it as the accompaniment of their voice, owing to its sonorous tone drowning all ordinary utterance.

The cithara was decked out with carving and paint; it was one of Greece's "sweetly-sounding carvings." The cithara-player was arrayed in a long flowing robe, and, crowned with a garland, he stood on an eminence among the people, and sang his beautiful song. The long flowing robe was what Arion arrayed himself in when he was told to prepare to die, having to cast himself in the sea to escape the malice of the sailors. Appareling himself in his robe, and with his cithara in his hand, he stood on the poop, and sang the Orthian song. And even those sailors retired awhile to hear him, for he was the finest cithara-singer in the world.

So the cithara was the instrument of the great and splendid singers, and it was thus the instrument of

the Agon (the musical contests at the Olympian, Pythian, and other games). But on all other occasions the lyre was nearly universally employed: at banquets, revels, at the gymnasia, in domestic life; used by women, boys, and men alike.

Turning from the stringed instruments of Greece to the wind, we shall be aware of as numerous a variety. Flageolets, flutes, clarinets, and oboes were all represented. To the first class belonged the monaulos, the nightingale of the pipes, and the Lydian flute; to the second the photinx and the lotus pipe; to the third the Phrygian pipe and the elymus; to the fourth the gingras and the nablas.

The materials of which the pipes were made were reeds, copper, lotus wood, boxwood, horn, ivory, or laurel. Many of them were double. The Phrygian pipes were double, being double clarinets, and the Lydian pipes likewise were double flageolets. The pipes were not joined, but were held loosely in the hand. The right flute, which was the deeper one, played the melody, and the left, the higher one, performed the light accompaniment to it.

Such was the Greek method of accompanying, not only in the case of two flutes supplementing one another, but even with the lyre and the voice. The "melody," which was assigned to the latter, habitually traveled at a low pitch by comparison; while the lyre flung its artless harmonics "above the song." This was the method of accompaniment which had been introduced by the poet Archilochus at an early period of Greek music, and remained as the regular form throughout the whole history of the art.

Accompaniment and harmony had thus grown up;

the instruments had been perfected and multiplied; the graces of song had been carried to a height of excellence, while the elaboration of time and rhythm was being worked out in the dances. The musicians who now came forward as the exponents of Greece's best music were the choral poets, such as Ibycus, Bacchylides, Simonides, and Pindar, whose compositions were designed with a view to the evolutions of a vast body of dances no less than the delivery of the music by song and instrument. Dancing had always been the most popular of pastimes in Greece. It passed, indeed, beyond a pastime, and became a great and serious art.

The Cretic foot was first devised in the dances of Crete, where Apollo himself was said to have led the measure, striking his lyre as he led the dances, with his hair wreathed with leaves, and twined with threads of gold, and his arrows rattling on his shoulders. With such a picture before us, we shall cease to wonder at that expression of Simonides, who says that the dance is dumb music, and music is speaking dancing.

The construction of the choral songs flowed naturally from the form of the ancient round dance, being arranged in a strophe sung in one key, an antistrophe delivered in another, and an epode (a later addition, during which the dancers stood still or marked time) probably in the key of the strophe.

In 250 B.C. at a festival to Apollo, a band of several hundred musicians played a five-movement piece representing Apollo's victory over Python. Such programme music indicates a far more advanced school than many writers admit.

CHAPTER XII

THE GREEKS (CONTINUED).

Organization of the Greek Musical System by Pythagoras—The Chromatic Genus—Greek Modes in the Form they Reached under Aristoxenus — Greek Harmony — The Brotherhood of Pythagoras.

BY the time of Pythagoras the following modes were in use in Greece: the Æolian or Hypodorian or Locrian mode, the Hypophrygian mode, the Hypolydian mode, the Dorian mode, the Phrygian mode, the Lydian mode, and the Mixolydian mode. These modes differed in pitch, the lowest being the Æolian, which ranged from b to b; and the highest the Mixolydian, with a compass of from a to a′. The three genera of Greek music, the diatonic, chromatic, and enharmonic, of course prescribed the order of the intervals in every case.

The problem which lay before Pythagoras was the union of these various modes into one scale, which might be of any complexion, provided only it exhibited in a lucid and convenient form all the modes here recorded. He took the Dorian mode, and to each end of it he added two tetrachords; namely, a tetrachord to the lower e—b to e, and a tetrachord to the upper e—e′ to a′. The scale as now constituted was b, c, d, e, f, g, a, b, c′, d′, e′, f′, g′, a′. While the extreme tetrachords here are conjunct, the interior ones, it will be observed, are disjunct.

Pythagoras, having thus a scale of two octaves, all but a note, before him, took the Mixolydian mode, and applied it to the lowest note, b, and since the semitones of the Mixolydian mode are between the first and second notes, and the fourth and fifth notes, it will be seen that the Mixolydian mode exactly coincides with the notes of this great scale from b to b. Pythagoras called the octave in this great scale from b to b the Mixolydian octave. Next he took the Lydian mode, in like manner, and applied it to c, which is the second lowest note of his great scale. Since the semitones of the Lydian mode occur between the third and fourth notes, and also between the seventh and eighth, it will be seen that the Lydian mode exactly coincides with the octave from c to c, as the Mixolydian had with the octave from b to b. Pythagoras called the octave from c to c the Lydian octave. He applied the Phrygian mode in like manner to d. The Dorian mode stood as it was. The Hypolydian he applied to f; the Hypophrygian to g, and the Æolian to a. He named these various octaves by the names of the modes.

In order that his scale might have perfection, he added a note (a) to the bottom of it. This he called the "added note." In order to accommodate the scale to the workings of the enharmonic genus, Pythagoras adopted a simple and effective device. The two middle notes of each tetrachord, beginning from b, he called movable, the other notes he termed fixed. The chromatic genus could also be expressed by this scale written with the movable notes altered as needed. The chromatic genus made a leap of a tone and a half, and divided by two chromatic semitones.

By the time of Aristoxenus, who lived some centuries after Pythagoras, various new modes had sprung up in Greece in addition to the seven for which Pythagoras had made allowance in his scale. Room had to be found for these—the new ones were eight in number—and the scale of Pythagoras was augmented by the intrusion of as many chromatic semitones.

The Greek harmony, which had partaken more of the nature of improvised accompaniment up till the time of Pythagoras, was by him organized and laid down on scientific principles. He admitted as concords the octave, fifth, and fourth; to these were afterward added the double octave, the twelfth, and the eleventh. As discords, the second and third were permissible, and perhaps the ninth and tenth.

More interesting, perhaps, to general sympathy than the technical labors of Pythagoras for the cause of Greek music was his institution of a musical brotherhood in the south of Italy, among whom he sought to realize his doctrine that music is the great means of education in life, and the guide to all moral virtue. The members of its confraternity all rose together at an early hour in the morning, and having assembled, sang many songs and hymns in chorus, which freed their spirits from heaviness, and attuned them to harmony and order. This was sometimes varied by instrumental music for a change, without the accompaniment of singing.

It was their custom to meet together in some selected spot, generally in a temple, or in a portico, or avenue, and there they walked and conferred together, teaching and receiving instruction from one another in music, arithmetic, and geometry, the arithmetic and geometry

being designed to educate their intellect, and the music their passions and feelings. In this conclave they made use of ineffable melodies and rhythms, not only to correct any perturbations of mind which might have arisen in spite of all their care, but also to sink deep into the soul, and subdue any lurking tendency to jealousy, pride, concupiscence, excess in appetite, angry feelings, looseness of thought, and other weaknesses of soul, for all of which there were sovereign musical specifics, that Pythagoras had prepared like so many drugs. After some hours they betook themselves to lawns and gardens, to exercise their bodies in various ways. In the common hall, toward noon, they had their first meal of the day, only eating bread and honey, or a piece of honeycomb. When evening came, they again occupied themselves with musical concerts for some hours.

It was amid the privacy of this ascetic brotherhood that the mysterious doctrines of Pythagoras were elaborated touching the creation of the world by music and the harmony of the spheres.

CHAPTER XIII

THE GREEKS (CONCLUDED)

Three Specimens of Ancient Greek Music—Tragedy at Athens—The Great Theater of Bacchus—The Actors—Method of Performing the Tragedies—The Chorus—Choral Dances and Songs.

WHERE are the melodies that filled the clear air of Athens in the heyday of its music? They are all perished, like its glory. Inscriptions cut in stone endure from the days of Egypt; sounds, that have an affinity with breezes, will scarce fetch a century's antiquity. Time, that has spared the treatise of Aristides, has wafted away the melodies of Sappho.

Three poor fragments alone remain from the Roman period: the first is from a hymn to the Muse by Dionysius, who was a poet of the Greek revival under Hadrian; the second is a hymn to Apollo by the same; and the third a hymn to Nemesis by the poet Mesomedes, who was probably a contemporary of Dionysius, but whose date we do not certainly know.

In Athens itself the center and meeting-ground of the musical life of the city was at the great theater of Bacchus, where the tragedies—or, as they should be more correctly termed, the operas—were performed at stated seasons of the year in honor of the god to whom the theater was dedicated. They were part of a religious observance connected with the worship of

Bacchus, having originated in their most primitive form from the dithyramb, or sacred hymn in honor of that god, which was danced round his altar with appropriate mimic gestures by the worshipers.

The great theater of Bacchus was constructed on a hillside, the seats being cut in tiers on the hill. Thirty thousand seats were provided for the spectators, and in a great open space below them, not unlike the arena of our circuses, was a large flat piece of ground, called the orchestra, where the chorus went through its evolutions. In the center of this rose the altar of Bacchus, on which an aromatic gum was kept burning during the performances, in remembrance of those ancient times when the blazing altar was circled round by the dithyramb. Fronting the seats, on the other side of the orchestra, rose the stage, which was as high as the lowest seat of the tiers. Behind the stage there was a large saloon for the actors and chorus, with property rooms and dressing-rooms to the right and left of it. Behind all there was a large park or lawn, set with trees, with a portico round it, for the chorus to rehearse their parts in, and wherein promenaders might expatiate between the pieces.

The actors all wore masks, inside of which was an apparatus resembling a speaking-trumpet, the object of this being to make the voice carry to the farther verge of the spectators. The actors declaimed their parts in the manner of the epic rhapsodists, reciting in a sort of exalted monotone. When they had finished their dialogue or harangue, the chorus, preceded by a line of flute-players, came dancing through the side wings into the large arena of the orchestra singing a most harmonious and plastic song. The flute-players

ranged themselves on the steps of the altar, fronting the stage, while the chorus, in time to their song, performed their dances and evolutions. At the conclusion of the song and dance of the chorus, the actors began their chants again, which were followed by another choral song and dance, and in this graceful interchange of melodies, music, and impassioned or chanted declamation, the structure of the drama consisted.

The chorus entered through the wings of the orchestra with all the pomp of a mimic army. When they were fifty in number, which was during all the prime of Æschylus, marching with their band of flute-players before them, they were an exact representation of the Spartan company of fifty called a pentecostys. They marched either in column or in ranks, like a body of soldiers in battle array. Proceeding down the large open space of the orchestra, they took up a position round the altar of Bacchus, where their leader, like the captain of the Spartan company, stood on the steps, and led the song which they had been singing as they entered. When it was a chorus of women, they would enter in a style less martial, as in the "Prometheus," where the fifty daughters of Oceanus, the nymphs of the sea, are drawn in through the air in a car, with all their azure wings rustling.

The action of a tragedy was diversified with various choral dances and songs; the lyre often accompanied the declamation of the action, but the flute was the instrument *par excellence* of the dances. At certain places of the tragedy, principally at its most impassioned moments, the actors themselves broke out into melodious song. But these instances were rare, and

when they became common in the decline of the art under Euripides, who invented the monody or "florid solo," they met with reprehension from the best critics in Greece. During the epoch of Sophocles and Æschylus, the palmy days of the Athenian music, the florid and melodious effects of song were reserved for the chorus alone, the actors being forced to content themselves with chanted declamation. In the graceful and frequent alternation of these two forms, the main beauty and sublimity of tragedy, in the opinion of Aristotle, consisted.

CHAPTER XIV

THE ROMANS

General Mingling of all the Musics of the Ancient World at Rome—The Roman Pantomimes—Instruments in the Orchestra—Nero—His Performances at the Theaters—His Patronage of Organ-builders—The Water-Organ—Death of Nero—The Early Christians—Their Psalms and Services—Progress of Music among Them.

IN Rome we find, after centuries had passed away, not only the reappearance of the gay Greek music, but in that capital of the earth a general mixing and blending of all the musics of the pagan world. Under the arches of the Campus in Imperial Rome might have been heard the sambucas and gingrases of the Syrian dancing girls, and beating in the taverns hard by the drums and cymbals of the tipsy priests of Tyre; in the theaters the flutes and lyres, and songs of Grecian chorus-singers, and winding along to the temples of Isis and Serapis, bands of Egyptian musicians with harps and sistrums—all the world's minstrelsy was there, in that great churning-press of nations which men called Rome.

The theaters, where we shall find the central point of the music, no longer served as the temples of a national religion, but were places of spectacle and amusement. Not only had the plays lost their religious significance, but they had also greatly changed in character. Trag-

edy had in a great measure passed away, and the pantomime reigned as the popular entertainment in its room. As in the tragedy, there were chorus and actors in the pantomime, but the chorus took no part in the action of the play. Stationed on the stage, they formed a kind of orchestra, partly vocal and partly instrumental, which accompanied with music and song the gestures and dancing of the performers.

The instruments used by the chorus were worthy of the pomp and pageantry of Rome, and also of that Oriental love of din and roar, which in Rome appeared so strongly, being cymbals, gongs, flutes, pipes, gigantic lyres, castanets, rattles, clattering shells, and foot-castanets. The cymbals, small and concave, almost fitted in the palms of the hand, yet made a loud clashing noise. The gongs were generally known by the name meaning "vinegar-jar gongs," because in shape they were much like vinegar-jars. They were made of brass, or sometimes of silver, and give a rich sonorous sound when struck. The flutes and pipes were much like the Greek pipes, some of them, however, being bagpipes. Long ago in the fields of Latium had the shepherds discovered the art of fitting their pipes into a bladder or bag, which should act as a wind-chest, and greatly lighten the labor of blowing. The gigantic lyres were also like the Greek in shape, but much larger and more powerful. The rattles were brass rings attached to iron rods. The castanets were sometimes made of brass, and decorated with bits of crockery, wood, etc. The shells were rattles of crockery-ware or shells. But most remarkable were the foot-castanets; they were great clattering fans, or clogs of wood, that were worked by the foot, and generally in exact time to the

steps of the dancer; for all the time that the orchestra was singing and playing, the actors were carrying on their dumb show to the audience, endeavoring to express by their motions and gestures the action of the narrative that the chorus was singing.

These chorus pantomimes were produced on the most stupendous scale. Sometimes more people were on the stage than there were in the theater itself, for what with the immense pageants of actors, and the great choruses of singers and instrumentalists, the stage was full. "The passages are full of singers," says an eye-witness; "the orchestra is thronged with trumpets, and every kind of pipe and musical instrument peals from the stage." There were interludes of instrumental music, *entr'actes,* and overtures of flutes alone. The scenic displays were licentious; and Roman music lacked the chastity of Greek art.

Its chief patron was the Emperor Nero, who was celebrated as a professional singer in the theaters. His favorite parts were Orestes, Canace, Œdipus, and Hercules Furens. He had made his début at Naples in the third year of his reign. Scarcely had he stepped on the stage and begun the opening *scena* of the tragedy, when the shock of an earthquake was felt in the theater. Some said that the gods were angry that the emperor of the world should be seen in such a character. During all the time that he was singing at Naples, he would scarcely allow his voice any rest, and only left the theater for the baths. From Naples he went to Greece, and sang at the principal theaters there, entering into public competition with all comers at some of the games, and several times receiving the prize. Such diligence did he use to improve his voice,

that he would sit up with his singing-master, Terpnus, till late in the night, practising his arias and roulades for the next day. He slept with plates of lead on his chest to correct unsteadiness of breathing and give him the power of sustaining his notes in equal volume. He would also abstain from food for days together in order to purify his voice, often denying himself fruit and sweet pastry, which are known to be prejudicial to singing. He was not only a cultivated singer, but a skillful performer on many instruments as well, and eminently a connoisseur. He could play the flute with the best players of his day, and was no mean performer on the trumpet. He was also a skilled lyre-player, but affected particularly that small Assyrian instrument the pandura, with three or four strings, which was now making its way along with other musical oddities to Rome.

During a musical tour of his through Greece, a revolt broke out among the Gallic legionaries, who put their general, Vindex, at their head, and began to march on Rome. Their disaffection was joined by the legions in Dalmatia under Galba, a more experienced general than Vindex, and a more powerful opponent. The news of this rebellion drew Nero reluctantly from the theaters of Greece, and after many delays on the route he appeared at last in Rome. The armies were not far off, and prompt action was essential; but instead of haranguing the senate, and issuing orders for calling out the troops, he spent the first day of his arrival in examining a new instrument, which had just been brought to Rome. It was called an organ, and had been made after the designs of Ctesibius of Alexandria, who derived the first idea of his water-organ

from the clepsydra, or water-clock. The water in this mechanism was made to drop upon wheels, the motion of which was communicated to a statue, which gradually rose as they went round, pointing with a stick to the hours marked on a pillar. At night it sounded the hours on a flute instead, the air being forced through the flute by the agency of water. Taking his hint from this, he had made the hydraulis, or "water-flute," and eventually the water-organ, which, after various improvements, had traveled to Rome.

Having seen the instrument, Nero was well pleased with it, and determined to introduce it into the theaters, saying that it would make a most agreeable addition to the orchestras of the pantomimes, and would also come in well for tragedy. The same evening he banqueted, meaning to commence his preparations against the rebels next day. But the next morning brought news that another legion had revolted, and that three armies were marching on Rome. Nero assembled the singers and dancers from the theaters, and had them dressed like Amazons. Then putting himself at their head, he ordered the gates of the city to be flung open that he might go to meet the foe. He believed that perhaps some prodigy would be worked in his behalf, or that the soldiers, amazed at so strange an equipment, might return to their allegiance. But when the push came, and the armies were close to the city, his friends all abandoned him. Only a freedman of his, named Phaon, and the boy Sporus, whom he loved, and two slaves, still remained faithful, and with these he set off to Phaon's country house, in a storm of thunder and lightning. He was there introduced into a small chamber underground. He made them dig a grave,

and Sporus begin the funeral lament. Nero looked at the grave, and cried, "What an artist dies in me!" But while he was yet speaking the hoofs of his pursuers' steeds were heard clattering in the distance, every minute growing louder and louder. He burst into a verse of Homer's:

> The gallop of swift-footed horses strikes on my ear,

and, when he had finished singing, set a dagger to his throat, which by the help of Epaphroditus, his slave, he plunged in, and so he died.

Pagan music died with him; for though those theaters and pantomimes and great orchestras of many nations still survived, and a long line of emperors were still to come, yet a new music had begun. About this time a belated wayfarer, coming home at night through the Flaminian or Latin Way, or other road on the outskirts of the city, might have seen lights among the tombs, or glimmering from the catacombs underground; and muffled voices would strike his ear, as of men engaged in secret prayer and forbidden rites. The Christians had come, and these were their assemblages. Food for the torches of Nero, as the years wore on they waxed stronger and more numerous; but at first, and for a long time, they were obliged to hold their gatherings in such places as these. They met always in the evening, and sometimes at the dead of night, for fear of the law which prohibited all secret assemblages. They were the dregs of the people, many of them slaves, and all poor and despised and friendless.

At these meetings they would sing psalms, and in their psalms they were all unconsciously framing the

new music of the world. It grew, as all musics originally grow, from the bosom of speech. Their psalms had no meter, and would fit no tunes, none of the gay tunes of Greece and Rome, that were fluttering on the golden surface of life, if indeed they had sorted with the mood of these poor outcasts. But a new style of strain, quite different from all we have hitherto been speaking of, must be born in the world to express them.

Greek music was born amid the patter of the dancers' feet, in showers of sunlight, and swimming of the senses. But Christian music had its birth in subterraneous vaults, among desperate men, to whom sorrow was a sister, and fear their familiar. The psalms in their services they muttered and mumbled, rather than sang. On happier days they would exalt their voices and declaim a little the words, but still it was far from singing. The only approach to the regularity of musical contour was the parallelism of parts in each verse, like that peculiar to the Hebrew psalms.

The congregations were accustomed to divide themselves into two groups, and declaim verses about, or else the halves of verses, first one group singing, and then the other answering them. This was called the antiphonal method of singing—the Semitic manner of choral declamation.

In addition to this comparatively organized method of singing, the congregations were accustomed to give vent to their emotions in the words "alleluia," "amen," "hosanna," etc., which they would exclaim in ecstasy of worship.

The primitive Christian idea of music may be gathered from the following utterances of the Fathers of

the Church: "As David sang psalms on a harp to the Lord, so do we, too, sing, but on a harp whose strings are alive—our tongues are the strings; and more the Lord does not require." "The only instrument we use is the voice. The Word, and the Word of peace, is enough for us. Let syrinxes be given to silly clowns, the pipe to superstitious men, who pay honor to idols. Such instruments are to be banished from all sober company, and are more fitted for beasts than men. How entirely, then, must they be kept from the assemblages of Christians! Be far from us those florid songs and dissipated music, that corrupt the morals!"

Yet there was no preserving this simple music in its infant purity for long, and shutting out completely the influences of the world.

As it was the custom to have a president of the meeting to preach and take the lead in the prayers, so it was also the practice in the psalmody to have a precentor who should lead the psalmody; this seems to have been the habit from very early times. It was natural that this leader, feeling himself looked up to by the others, should sometimes be vain of his duties, and introduce a touch of art into the simplicity of the Christian psalms. Yet this did not have much effect on the congregations until largeness of numbers, or a growing respect for ceremony, which even their simplicity could not quite be free of, made them choose certain members of their body as regular psalmists in their services, who should follow readily the lead of the precentor and act with him, and whom in their turn the general congregation should follow. Toward the end of the second century after the beginning of Christianity, we find among the regular officers of their

gatherings—doorkeepers, exorcists, readers, etc.—the names of singers also appearing, by which we may be sure that actual choirs had begun to be employed. Among these singers women as well as men were usual.

As the Christians grew stronger and more numerous, and numbered wealthy converts in their ranks, they began to worship more openly and with greater pomp. They would hold their services in basilicas, or public halls, which were the halls that the magistrates sat in during the daytime. Here would the Christians assemble, and conduct their services; and "the roofs reëchoed with their cries of alleluia"; and the sound of their psalms, as they sang them in immense congregations, "was like the surging of the sea in great waves of sound."

CHAPTER XV

EARLY CHRISTIAN MUSIC

The First Christian Songs and Psalms—Weakness and Unsteadiness of the Singing—Indifference to these Points on the Part of the Worshipers.

AT the services of the early Christians, the utterances by the congregation of "alleluia," "amen," and "hosanna" became much extended, for they loved to linger over them as they said them. Repeating the alleluia, they would dwell upon it, and declaim it, "alle-----luia.....," as if they were loath to let it go. As they sustained the tones, what waverings and tremblings would there be of their untaught voices! no long-drawn notes, such as practised singers give, but wayward dwellings on their loved words, and sighs of earnestness and emotion. "Amen" in like manner they would dwell on—"A-----men"—as if it were never to be done, so much they longed to express its meaning. But besides these, actual chants and psalms had grown up, often they knew not how. First there was the angelic hymn. They called it a hymn indeed, but how far was it from being what we think of when we speak of "hymn"! It was rude and shapeless, like their psalms, with no meter to form or adorn it, and was the very utterance of their souls. Its words were those beginning: "Glory to God in the highest, and

on earth peace, good will toward men." This was the angelic hymn they sang, and as they sang they thought the angels in heaven sang with them every morning. There was also the cherubic hymn, or trisagion, which was revealed in a vision to an ancient Hebrew prophet. Also, there was a verse of song, not so extended as these, which had grown up more like the "amen" and the "alleluia," as a passionate exclamation in the services, "Lord, have mercy on us," or "Kyrie eleison," which was much lingered on, in the utterance, "Ky-------rie.....eleison."

Let us now examine more closely these Christian chants and psalms. First, they would have no tonality, for what were tones and scales to earnest men, who also were in the main ignorant men, knowing little more than how to praise God, and whose psalms were but the overflowings of an earnest heart? Even if the precentors had been skilled enough to check off the psalms in apt tonalities, what scope had they to make their knowledge good among such simple singers? But the absence of instruments from the psalmody was another reason why they would find it difficult to make much musical precision. Next, their psalms would suffer from all the failings of uneducated voices. If we examine the behavior of such a voice, we shall notice first that it has the greatest difficulty in lighting on a steady note. An uneducated voice will always anticipate a note it rises to, or a note it falls to, by two or three others on the way. Whether it does so because it cannot yet wholly shake off the influence of speech, which seldom makes intervals, but covers all up, or because there is a greater ease and less effort in sliding up or down than in jumping, may well admit conjecture.

How would this unsteadiness of tone be made evident in the unpractised Christian singing, especially in those exclamations of praise and fervor, the "alleluia," the "amen," and the "Kyrie," etc., where they dwelt so lovingly on the syllables as if they were loath to let them go!

The real truth is that the main aim of the early Christian song was not the exposition of musical tune, but the fervent utterance of holy thought, to the detriment and contempt of the tones in which it was uttered. St. Basil, who describes Christian music at this time, saying that the Holy Ghost was the author of it, considers that its main title to praise is that it profited the soul by the holy thoughts it expressed and the holy words it declaimed. "For through it," he says, "high advantage comes to one and all; for those who are old and steadfast in the faith, with what delight do they hear the music mixed with holy mysteries! and those who are young in years, or touching perfection of virtue as yet not grown to ripeness, while they think they sing, in reality learn."

St. Basil was the Bishop of Cæsarea, and we hear of the singing at his services, how they would pass the night in a vigil of prayers and weeping, and then, when the day broke, would begin the singing of their psalms. St. Basil, more than any other man of his time, was the supporter of the early Christian spirit, and in his ordinances about music he followed the pattern of St. Athanasius, or the Alexandrian style of Christian song, which was the best and purest exponent of the Christian spirit; for now another style of song was growing up in Italy, called the Italian style. But Alexandria, and Egypt generally, had been the stronghold of the

primitive Christian spirit. There the monks preserved the earliest and simplest style of Christian song, singing antiphonally, and rather speaking than singing. St. Athanasius would have it also so at Alexandria, making the people rather read and speak than sing; this was the style which St. Basil upheld at Cæsarea. There was an intimate communion between the Church of Cæsarea and the Church of Armenia, which was an offshoot from the Church of Cæsarea. Armenia in its seclusion had preserved the earliest Christian traditions, having been founded in the second century. The influence of St. Basil was in course of time extended to Constantinople, and a service that he had written began to be used there.

MEDIEVAL AND MODERN EUROPEAN MUSIC

CHAPTER XVI

THE MUSIC OF THE MIDDLE AGES

Modes — Neumes — Theorists — Organum — Solmization — Measured Music—Counterpoint—Motets—Troubadours—Minnesingers—Music in England—Dufay to Lasso in the Netherlands—Italian Choral Music—Early German Composers.

DURING the centuries in which the Roman Empire was falling to pieces, and until some of the modern states began to emerge from the chaos of barbarism and bloodshed, the development of any art was impossible. Music was only cultivated by churchmen and was of the simplest description—confined to melody only, and indefinite in pitch and rhythm.

A certain number of scales or modes, and a few simple traditional formulas of melody, were authorized for Church use about the fourth century; and a few more modes, which were really only extensions of the earlier ones, were added some centuries later. The modes of the earlier group are always associated with the name of Ambrose, Bishop of Milan, who died 397 A.D., and are called authentic; the later ones are traditionally attributed to Pope Gregory the Great and are called plagal modes.

The methods of writing music were extremely scanty and imperfect. The sources of the modern system of writing were the neumes, which were marks put over the words to be sung, and indicated vaguely the

inflections or changes of pitch to be used. They were made more definite as time went on by drawing colored lines through the haphazard open order of the neumes, which were thereby made to indicate definite relations of pitch and definite intervals; and the shapes of some of the neumes, through which the lines were drawn, gradually changed into some of the notes which are used in modern times.

In the absence of composers, the early Middle Ages were plentifully supplied with theorists. One of the first important theoretical works of the medieval dispensation is the work called "Musica Enchiridiadis," formerly attributed to Hucbald, but now to Otger, Abbot of St. Pons de Tomières, of the tenth century. It contains information about notation, and also about the organum or diaphony, which was the first form of harmony, and consisted at that time chiefly of consecutive octaves, and fifths or fourths, added to the plain song of the Church.

To Guido d'Arezzo (about 1000-1050 A.D.), another monk, is attributed the distribution of the twenty notes then used into groups of six, which were called hexachords. To him also is attributed the invention of "solmization," which is the naming of the notes of each hexachord by the syllables, ut, re, mi, fa, sol, la. The origin of these syllables was a verse of a hymn to St. John, each line of which began with one of them, and each of which was sung to phrases beginning successively a note higher each time. This system of naming the notes has persisted into modern times; but ut, as a bad syllable to sing, has been altered to do, and the syllable si, to complete the necessary seven notes in each octave, has been added.

In the early days there appear to have been no means of defining the relative length of notes; and it was not necessary to find any so long as music was purely melodic. But when men began to sing in parts some means had to be devised to keep the voices together. The first work of mark attempting to deal with this subject was by Franco of Cologne. It was called "Cantus mensurabilis," or "Measured Song," and was probably written about the middle of the twelfth century. He adopted four standards of length, and called them —(1) maxima, or duplex longa, (2) longa, (3) brevis, (4) semibrevis. Their relations to one another varied in accordance with a time-signature which was put at the beginning of the music, which showed whether each long note was to be equal to two or to three shorter ones. In course of time the long notes dropped out of use, and the longest note now in common use, the whole note, is the shortest in Franco's series. He also indicated an advance in feeling for harmony by expressing his preference for mixing up thirds and sixths with the so-called perfect consonances, instead of going on in rows of fifths and fourths.

This development of harmony implies the transition from diaphony to descant; as the former consisted chiefly of mere doubling of a melody or plain song at the fifth or fourth, and the latter entailed more freedom of the parts. The improvement was chiefly arrived at through the attempts of the singers to vary the monotony of the organum by the addition of ornamental notes, such as in modern times are called passing notes. These extempore attempts were imitated by composers, and hence arose the distinction of "contrapunctus a mente," which was the extemporaneous descant

of the singers, and the "contrapunctus a penna," which was the written counterpoint of the regular composers.

The musicians of those days adopted also another method of singing in parts, which was to sing several tunes at once. They accommodated them by modifying the tunes a little when the roughnesses and dissonances were too conspicuous; but none of the many examples which survive sound anything but ludicrous to a modern ear. They were called motets.

The center of musical development in the twelfth and thirteenth centuries was Paris, which in those days was the chief focus of every kind of intellectual activity. The most distinguished musicians of the time were Léonin, Perotin, Robert de Sabillon, and Walter Odington, an Englishman.

Progress in the line of serious music was extremely slow and laborious. The efforts of composers for centuries continued to be crude and barbarous, and their compositions bore distinct traces of the diaphony from which their methods of part-writing were derived in the profuse successions of fifths with which they abounded. But in secular circles and among the people valuable progress was made by troubadours, trouvères, jongleurs, and minnesingers, who cultivated poetry and music under less restricted and less theoretic conditions, and with valuable results to art.

The troubadours (from about 1087 till late in the thirteenth century) cultivated lyric poetry and the tunes which are best adapted to it. Their center was mainly Provence and the south of France. Among the most notable were William of Poitiers, Richard Cœur de Lion, Marcabrun, and Guiraut Riquier.

The trouvères cultivated epic as well as lyric poetry,

and also the drama. Their center was in the northern parts of France, and extended to the south of England. Thibaut, King of Navarre and Count of Champagne, was a noteworthy trouvère; and so was Adam de la Hale, who wrote the play of "Robin and Marion," in which music is interspersed with dialogue. So was the English Walter Map, who wrote the story of Lancelot; and Chrestien de Troyes, who wrote its continuation; and Luc de Gast, who lived near Salisbury, and wrote the story of Tristan. The trouvères took a very important share in the development of part music, and cultivated the composition of secular chansons for several voices, in which a rhythmic element sometimes makes its appearance.

The jongleurs or ménestrels (minstrels) were the singers and story-tellers of the common people, as distinguished from the courtly and aristocratic connection of the troubadours and trouvères. They wandered about the country and attended fairs and markets, and had a regular guild or organization, the center of which was in Paris, where their headquarters continued to exist till quite modern times.

The minnesingers occupied the same position in Germany as the troubadours in France, and flourished later, from about 1150 A.D. till about 1260. Their most famous representatives were Heinrich der Beldecke, Walter von der Vogelweide, Wolfram von Eschenbach, who wrote the first German poem of "Parsifal," and Heinrich von Meissen, sometimes called Frauenlob. The meistersingers, who were the burgher poets and musicians of the towns, were of a later time still. Their most famous representative was Hans Sachs (1494-1576).

A FLORENTINE CONCERT
From the Painting by R. Sorbi

In England the remains of early musical art are much scantier, and the traditions are vague and unreliable. But there are distinct proofs that the country was fully up to the level of the continental nations; and one conspicuous but isolated instance, the famous round "Sumer is icumen in," is very far ahead of any other production of its time (about 1228 A.D.), both in tunefulness and management of the voice parts.

The earliest period of medieval musical development, which culminated in the twelfth and thirteenth centuries, was succeeded by a pause in artistic progress. Various causes, social and political, disturbed the well-being of European nations, and brought back a state of distress and confusion most unfavorable to all things intellectual and artistic. The fourteenth century was barren of musical productions of any value. Such relics as the fragments of works of Guillem de Machault (1284-1369) show but little advance on the standard of the previous century. The age was more conspicuously marked by the activity of theorists, such as De Muris (1300-70), who wrote the "Speculum Musicæ"; Tunstede (born at Norwich, and died in Suffolk in 1369), who wrote "De musica continua et discreta" in 1351; and De Handlo, who flourished about 1326.

The first sign of reawakening energy was manifested in England, and its proofs are the works of John Dunstable (about 1390-1453), a composer and musician hitherto chiefly known through the appreciative allusions made to him by later writers on music—as, for instance, by the Netherland theorist, John Tinctoris (about 1445-1511), who speaks of the "source and origin of the new art being among the English, the

foremost of whom is John Dunstable." In recent years a considerable quantity of his music has been unearthed in the cathedral libraries of Trent, Bologna, and elsewhere, and it is clear that he was in his time regarded as the greatest composer in Europe. The style of his works is for the most part crude, but here and there passages are found which are quite intelligible and interesting to the modern ear. An English contemporary of his, who was an important representative of the art and well known in Italy as well as his own country, was John Hothby. He wrote several treatises on music, the most important of which is the "Calliopea legale." He died in 1487. Unfortunately, the good beginning made by England was arrested by causes of which the Wars of the Roses were the most conspicuous, and but few indications of further musical progress can be traced in the country till the Tudor times. The equally disturbed state of France caused the center of musical activity to pass from Paris northward to the Netherlands, which held the preëminence thenceforward for a century and a half.

The first representative composer of the Netherlands period was Dufay, the dates and circumstances of whose life have only recently been traced and verified. He was a choir-boy at Cambrai about 1410, a member of the Papal Choir in 1428, rose to first rank as a composer, was a long while in the service of Philip le Bon of Burgundy and of his famous son Charles the Bold, became a canon of Cambrai in 1450, and died in 1474. His work is far in advance of the crude style of the earlier Parisian school, both in technique and expression, but he shows the influence of John Dunstable in sundry peculiarities of style and

diction, though his work in general is more mature. He is reputed to have been the first composer who used secular tunes for canti fermi in the place of the old ecclesiastical plain song—a practice which attained unfortunate notoriety in later days.

Among his most prominent fellow-composers were Faugues (born 1415), Firmin Caron (about 1460), and his own personal friend, Binchois, who died at Lille in 1460. The most distinguished composer of the next generation was Antoine Busnois, born in 1440, in Flanders. He was in the service of Charles the Bold, and died 1482. In his works is found a further progress in smoothness and equality of style, and specimens of well-managed imitation. The latter feature soon attracted composers so strongly that they began to lose sight of expression in their search after ingenuity, and expended all their powers on the contrivance of futile and mechanical canons. Of this kind of misplaced labor, Okeghem was the principal representative. He was born in Flanders early in the fifteenth century, and lived till 1513. He was looked upon as one of the greatest of European composers, and was in the service of Charles VII and Louis XI of France. But, notwithstanding his reputation, nearly everything to be found of his is marred by features of positive ugliness, probably owing to the misdirection of his energies. He was famous as a master, however, and especially as the master of Josquin de Près (born about 1450), the greatest composer of the next generation, and among the first who shows the characteristics of genius. In Josquin's works there are many examples of the most exquisite vocal effect and passages of noble and sympathetic musical expression.

He excelled alike in Church music and in secular chansons. He was one of the numerous Netherland composers who found employment in Italy, and was in the Papal Choir from 1471 to 1484. He died at Condé in 1521. Among his pupils the most famous were Jean Mouton (died 1522) and Nicholas Gombert (born 1495). The latter carried the traditions of the school to Madrid, where he was in the service of Charles V. He was a very prolific composer, and a good one.

A composer of scarcely less gift and feeling than Josquin was Obrecht, who was chapel-master at Utrecht when Erasmus was a choir-boy there, and lived from 1430 to 1506. With him may be fitly mentioned Brumel, Compère (died 1518), and Pierre de la Rue (died 1510), who were pupils of Okeghem.

During the lives of Josquin and Obrecht the first development of the art of printing took place, which soon had great influence in the diffusion of music; and their compositions were among the first that were printed.

In the latter part of the fifteenth and throughout the sixteenth century the Netherlands and Belgium produced a large number of great musicians, most of whom found employment in Italy. Among these Adrian Willaert (1480-1562) was famous for the choral works for a double choir which he wrote for use at the Cathedral of St. Mark's at Venice, where he was maestro di capella; also for his madrigals, from which he won the reputation of being the first madrigal-writer. Contemporary with him, and also attached to St. Mark's, was Philip Verdelot (about 1500-67), who was early in the field as a composer of madrigals, canzonas, and other works of the kind. He also had some

claim to be considered the first of the madrigal-writers, as examples by him were published in a collection which came out in Venice in 1533. Jacques Arcadelt (about 1495-1560) was also famous for his madrigals, of which he published several sets in Venice, beginning in the year 1538, which met with great favor.

The first Italian to come prominently before the world was Constanzo Festa (about 1490-1545). Madrigals of his were included in the same early collection with Verdelot's, and also in Arcadelt's. His advent marked the beginning of the time when the preëminence in music passed from the Netherlands to Italy. Netherland composers of great power still came before the world, such as Jacques Clement, commonly known as Clemens non Papa, who died about 1558; Cyprian van Rore (1516-65), who succeeded Willaert at St. Mark's; Waelrent (about 1518-95); Philippus del Monte (about 1521-1600), and the famous Orlando di Lasso (1520-94); but the Italians rapidly surpassed them, and before the end of the century had wrested the supremacy from them. Lasso's reputation overtopped that of all his countrymen. He was a man of interesting personal character, and a lover of strange experiments in music. The most famous among his very numerous works is his setting of the seven penitential psalms, which contains some of the most curious effects ever contrived for unaccompanied voices, and a great deal that is both characteristic and beautiful.

The spread of Italian musical gift was as rapid as its rise; and before the end of the century Venice produced Zarlino (1519-90) the theorist, and the two Gabrielis, Andrea (1510-86) and Giovanni (1557-

1612), great masters of choral art and experimenters in instrumental music; while from other parts of Italy came Claudio Merulo (1533-1604), the famous organist; Marenzio (1550-99), the greatest of the madrigal-writers, and Giovanni Pierluigi da Palestrina, the greatest master of the old pure choral style, in whom the progress of the previous centuries came to a final climax. Palestrina was born at the town from which he takes his name, about 1524. The obscurity of his origin and the greatness of his ultimate fame have combined to produce the usual crop of myths, but little is really known about him till he entered the service of Pope Julius III in 1551. His compositions are characterized by a quiet nobility and dignity of expression, which make them the most perfect and serenely beautiful religious music ever written; while his extraordinary instinct for choral effect of the purest kind enabled him to produce exquisite and subtle effects of sound with the voices, which in that particular style have never been surpassed. His death, in 1594, marked the turning-point to the decadence of the old choral style and the beginning of a new epoch in art, of which the first experimenters in opera and oratorio were the earliest representatives.

Among Palestrina's contemporaries who are worthy of being honorably remembered are Morales the Spaniard, who entered the Papal Choir about 1540, and the Italian Nanini (1545-1607), one of the foremost representatives of the Roman school. Another Spaniard, Vittoria, a little younger than Palestrina, was a very great master of choral art, and so was Giovanni Croce (1559-1609). Orazio Vecchi (1551-1605), Anerio (1560-1630), and Allegri (1586-1662) were also very

important Italian representatives of the latest phase of the pure choral style.

As sometimes happens in human affairs, the nation that was destined to go farthest was slow to develop. In these early times Germany was not so liberally represented by great composers as some other nations. But the country had produced a few remarkable representatives of the art, of whom the most notable was Heinrich Isaak, who lived in the fifteenth century, contemporary with Busnois and Okeghem. He produced a large quantity of fine Church music and some secular songs, among which was "Innspruch ich muss dich lassen," which in later times became one of the most famous of chorales. Johann Walther (1496-1570), the friend of Luther, took an important share in starting the music of the Reformed Church, and brought out the first Protestant hymn-book in 1524. Soon after followed Ludwig Senfl, Jacob Händl, commonly known by his Latinized name of Gallus; Antonius Scandellus, Thomas Stolzer, and Paulus Hofheimer. The latest important representative of the early form of choral art in Germany was Hans Leo Hassler (about 1564-1612), who was a pupil of Andrea Gabrieli in Venice.

CHAPTER XVII

ENGLISH MUSIC FROM THE TUDORS TO THE STUARTS

Tudor Influence—Henry VIII and Elizabeth—Early Church Music—Tallis and Byrd—Madrigals—Rise of Instrumental Music—Decline of Choral Music—Influence of the Stuarts and Puritans.

WHEN the Wars of the Roses came to an end in 1485, and the astute government of Henry VII gave England time to regain her balance, music began to be cultivated to some purpose in that country. The Tudors appear to have been a genuinely musical family, and their influence upon all kinds of arts was uniformly good. Henry VII himself had a large musical establishment, and the taste and skill of his son, afterward Henry VIII, were favorable to the state of music at court. The standard of musical composition in this reign was not very high, but excellent purpose is shown in the works of Dr. Robert Fayrfax, Sheryngham, Turges, Newark, Phelyppes, and others.

In Henry VIII's reign these somewhat tentative beginnings passed into vigorous exercise of musical faculty. The King himself produced some excellent compositions, and set a good example by his ability in singing at sight, which accomplishment came before long to be considered a necessary part of the equipment of a properly educated gentleman.

Various fortunate circumstances caused the transition from Roman Catholicism to Protestantism in Eng-

land to be gradual and moderate, with the happy result that the noble style of the Roman Church music of that age passed without change into the music of the Reformed Church. Before the Reformation became an accomplished fact, there were already a number of composers and musicians of great ability in the country, most of whom gave the Reformed Church the benefit of their powers, sometimes without forsaking the old Church themselves.

Of those who came earliest into the field at this time, the most noteworthy are John Taverner (organist of Christ Church, Oxford, about 1530), John Redford (1491-1547), Robert Johnson, John Sheppard (organist of Magdalen at Oxford, 1542), Robert White (organist of Ely, 1562-67; died 1575), and Christopher Tye (organist of Ely, 1541; died 1572). The last-named held a most prominent position among musicians, and did great service to the cause of the art of the Reformed Church by the dignified and masculine style of his compositions. He was appointed music-master to Edward VI, in whose reign the movement toward Protestantism, under Archbishop Cranmer's guidance, became more rapid and decisive.

When the English Service-Book was compiled in 1550, the traditional plain song used in the old Church was adapted to it by John Merbecke, thereby confirming the musical identity of the old and new services.

In the next generation of composers, Thomas Tallis (born soon after 1510, died 1585) occupied a foremost place. He wrote works for both Roman and Protestant use which are solid and masterly, and have a distinct character of their own. His pupil,

William Byrd (born about 1538, died 1623), had still more comprehensive talents, as he wrote admirable madrigals and instrumental music for keyed instruments, as well as Church music of the finest and noblest quality. Both Tallis and Byrd maintained their sympathy with the old Church till the end of their days, and the character of the music written for both the new and the old ritual is so similar as often to be indistinguishable; indeed many of the works used in the English service as anthems were merely adaptations from motets and *cantiones sacræ*, or similar compositions, with the words translated from the original Latin into the more familiar English tongue.

In Elizabeth's reign the progress of the previous years came to a brilliant climax. Tallis and Byrd by her time were men of mature years, and were followed by a younger generation fully worthy of the traditions they had established. Music has never been held in greater honor, nor cultivated with more judgment and high artistic sense, than at the time when the vigor of the nation in enterprise, adventure, and war was at its highest. The memorable year 1588, in which the huge Spanish Armada, with its 130 ships and 29,000 men, was defeated and dispersed, is marked in musical history by the definite beginning of the English madrigal period. A few isolated examples had made their appearance previously, such as the madrigal "In going to my lonely bed," attributed to Edwards (1523-66), and some secular part music published by Thomas Whythorne; but the publication of the first series of the "Musica Transalpina," by Nicholas Yonge, in this year, was the decisive beginning of a series of publications of madrigals and similar works

which followed in rapid succession for a quarter of a century. This work was a collection of the finest madrigals, chiefly by Italian composers of the time, and the editor, Yonge, appended a preface which comments on the growing taste for part singing and the general appreciation of madrigals among cultivated musical amateurs. His venture and his views were thoroughly justified by what followed.

The first new composer who made his appearance in the field was Thomas Morley, who excelled in all the known forms of art, whether in Church music or in madrigals, or in the charming ballets in which he combined the subtleties of the madrigal style with the brightness and freshness of the Italian balletti. His first publication was a collection of canzonets, which came out in 1593. In 1594 followed a set of madrigals, and in 1595 the first set of his ballets. In 1597 he published his "Introduction to Practical Music," which contains invaluable information about the state of music in his time. In the same year that admirable master, Thomas Weelkes, made his first appearance in print with a set of fine madrigals; and in the same year also appeared the first set of the beautiful "Songs or Ayres of Four Parts," by John Dowland (1562-1626), which mark, by their simple character and the definiteness of their form, the approach of the new era in music; a characteristic which may have come about through the fact that Dowland was a great lute-player.

In the next year, 1598, appeared the first set of madrigals by the greatest of English madrigal-writers, John Wilbye; in which we find the richest development of the madrigal form combined with wit, vigor,

and poetic feeling. The next year saw the appearance of ballets and madrigals by Thomas Weelkes and others, and the year 1599 the appearance of madrigals by John Bennet, one of the most versatile and expressive of composers in this line. In 1601 appeared a superb monument of the skill and artistic sense of the musicians of Elizabeth's reign in the "Triumphs of Oriana," which was a collection of twenty-five madrigals by English composers, made in honor of the Queen; almost all of which have distinct merit, while some are of the highest order. Of the composers who appeared first after this time the most important were Thomas Bateson, whose set came out in 1604; Michael Este, also 1604; and Orlando Gibbons (born at Cambridge, 1583, died at Canterbury, 1625), whose set came out in 1612—that is, nine years after the death of Elizabeth. The energy generated in Elizabeth's days lasted on into the days of the Stuarts, and the last-named writer was the greatest and most comprehensive composer of all the school, excelling even more in his superb music for the Church than in his fine madrigals. Of all the Church music of this period, indeed, Gibbons's is the highest type, and marks the culmination of the genuinely English branch of the polyphonic school, which came about a quarter of a century later than that of the Italian school.

The survey of the music of the Elizabethan period would not be complete without reference to the work of a few composers who devoted their energies almost exclusively to Church music, such as Richard Farrant (about 1530-80), Elway Bevin, who published a "Shorte Introduction to the Art of Musicke" in 1631; and Adrian Batten (about 1590-1640).

Reference is also due to the very serviceable work done in the line of instrumental music in the pieces written for "Virginals," by a considerable number of composers, the most ingenious of which, from a technical point of view, were written by John Bull (about 1563-1628)—an organist of universal fame—and the most interesting by Orlando Gibbons. Mulliner's manuscript collection of such music (about 1565) was probably the earliest made. More famous is the manuscript known as "Queen Elizabeth's Virginal Book," containing over 290 pieces, mainly by English composers. It could not, however, have belonged to Queen Elizabeth, as several of the pieces in it were certainly written after her death. Another collection is "Lady Nevill's Book," of forty-two pieces, all by Byrd. W. Forster's "Virginal Book," dated 1624, contains seventy-eight pieces, and Benjamin Cosyn's, ninety-eight. The first printed book of such music was the "Parthenia," which came out in 1611, and contained a number of pieces by Byrd, Bull, and Gibbons—some of those by the latter composer being specially fine. The pieces in all these collections consist mainly of old dances, such as pavanas and galliards, and preludes, fantasias, and arrangements of choral works. They indicate a considerable taste for such music and no little development of technique.

England was indeed very brilliantly represented in every department of art then known. Music for sets of viols of as good quality as any in Europe was produced by such composers as Thomas Morley, Michael Este, Alfonso Ferrabosco (about 1580-1652), and Orlando Gibbons. Lute music was represented by John Dowland, who was lute-player to Christian IV of

Denmark. Organ music was represented by John Bull and Peter Philipps. The latter lived abroad most of his life, chiefly in Flanders. He was one of the foremost representatives of organ music of the day, and a notable musician in every respect. He produced admirable madrigals, motets, and other choral music, besides organ music.

During the unfortunate rule of the Stuarts the standard of music rapidly declined. But though Stuart taste had considerable influence upon the direction taken by music, especially in the case of the second Charles, the lowering of the standard of choral music cannot fairly be laid to their charge any more than to the Puritans. Musical historians are fond of holding the fanaticism of the latter answerable for the extinction of choral music; and no doubt they put the finishing blow to a crumbling edifice. But the decadence began long before the Civil War broke out. The last great representative of the choral epoch in Europe died in the very week Charles married Henrietta Maria. And though the complete change which had come upon music about the year 1600 was slower in influencing the art in England than in other countries, it was bound to bring the great era of pure choral art to an end there as elsewhere, without the assistance of either Stuarts or Puritans.

It is noteworthy that though the cultivation of the choral style came to an end, the wave of musical enthusiasm and ability did not by any means cease abruptly. It was deflected, as in other countries, into new channels; and England continued to be ahead of all the countries of Europe in the new lines of art, such as instrumental music and theatrical music, till

the death of Purcell. Lute music was brilliantly represented by Thomas Mace, who brought out his famous book, "Musick's Monument," in 1676. Christopher Sympson carried the art of viol-playing to the highest pitch then known, and brought out his most important book, "The Division Violist, or an Introduction to the Playing on a Ground," in 1659, the year after Cromwell died. Music for sets of viols was represented by the "Fancies" and sets of "Ayres" and other pieces by John Jenkins (1592-1678), William Lawes (born about 1590, killed at the siege of Chester, 1645), Matthew Locke (born early in the seventeenth century, died 1677), Thomas Tomkins (about 1590-1656), and many others; while the new style of incidental music to masques and stage plays was written with much success by Henry Lawes (1595-1662), Matthew Locke, Simon Ives (died 1662), and others.

In these secular directions the short period of civil war did not have any great effect upon music. Many musicians who had been active before it began undoubtedly carried on their artistic work while it was going on, and came forward with undiminished luster after the Restoration. The wave of musical enthusiasm and ability which began in the Tudor times may therefore fairly be considered to have lasted on almost till the time when Handel went to England. For though the line of music to which composers gave their minds was changed, and Church and choral music practically fell from a grand and mature style to an almost infantile condition of experimental crudity, an equal standard of ability, comparable to the best in other countries, was still displayed in instrumental music, solo music, and music for the theater.

CHAPTER XVIII

THE BIRTH OF OPERA AND ORATORIO

A Revolution in Art—Harmonic Music—Music-Drama and Oratorio—Monteverde—Carissimi—Schütz—The First Opera Houses Open—Cavalli—Cesti—Stradella—The First Important Operas.

THE last quarter of the sixteenth century witnessed the culmination of pure choral music in the works of Palestrina, Lasso, Marenzio, and their fellows. It also witnessed the beginnings of a new movement, which amounted to no less than a complete artistic revolution.

About this time a certain group of artistic and musical enthusiasts entered into speculations on the possibility of developing a new kind of musical art, in the form of solo music with instrumental accompaniment. Their central idea was to revive the style of performance of the ancient Greek dramas; and in connection with this they made experiments in the musical declamation of sonnets and poems of various kinds.

The most prominent of those who took part in the earliest stages of the movement were Vincenzo Galilei, the father of the famous philosopher and physicist Galileo; Emilio del Cavalieri, a composer; Rinuccini, a poet; Giulio Caccini, a singer and composer; Jacopo Peri, a musical amateur of ability and taste; and Giovanni Bardi, Count of Vernio, in whose house at

Florence they used frequently to meet. The first recorded examples of their experiments were three pastorals by Cavalieri, called "Il Satiro" (1590), "La disperazione di Fileno" (1590), and "Il giuoco della cieca" (1595). These were looked upon as containing the first successful examples of recitative, with the invention of which Cavalieri is accordingly sometimes credited. They were followed by the drama "Dafne," which was written by Rinuccini and set by Peri in 1594 or soon after.

These early experiments have unfortunately been lost; the first example of their reforming energy which has survived is the "Euridice," which was written by Rinuccini and set by Peri, and performed on the occasion of the marriage of Henry IV of France and Maria de' Medici in Florence, in 1600. This work is of a very slender description, consisting mainly of formless recitatives interspersed with short passages of instrumental music called "ritornelli," and equally short and unimportant choruses. The object of the composer appears to have been mainly to declaim the poem without attempting striking musical effects, and to look to the drama to supply the interest. Caccini also set the poem of "Euridice," and wrote a book on the new movement, called "Le Nuove Musiche."

In the same year (1600) Cavalieri's oratorio "La Rappresentazione di anima e di corpo" was first performed in Rome, shortly after the death of the composer. The work was a product of the same order of ideas which gave birth to the first music-dramas; but its immediate antecedents were different. It appears to have been suggested by the performances of plays founded on Biblical subjects and combined with

simple music, which had been given in the Oratory of Santa Maria in Vallicella at Rome. These had been instituted by Filippo de' Neri, the founder of the Congregation of the Oratory, for religious purposes; and it appears that Cavalieri's oratorio had also a religious purpose, and that the familiar name which has become universal was derived from the place where these earlier works had been performed. The name "oratorio," however, did not come into use till considerably later. The first to use it in a published work is said to have been Francesco Balducci, who died 1642. The earlier examples were sometimes described as "dramma sacra per musica." In style Cavalieri's work appears to be finer than Peri's, as the prologue is a noble specimen of the early kind of declamation. The choruses are short and simple; some are like the "Laudi spirituali," and others have a histrionic character. The new movement was carried on by a good many energetic composers in the same line, and several more sacred musical dramas were produced in the early part of this century, as, for instance, "The Lament of the Virgin Mary," by Capollini, 1627; Mazzocchi's "Martyrdom of St. Abbundio," etc., 1631; "St. Alessio," by Landi, 1634; and others.

The most important work of the time was done in the line of the secular music-drama, which made great strides in the hands of Claudio Monteverde. This remarkable composer (born 1568) began his career as a violist in the Duke of Mantua's band, and afterward served him as maestro di capella until the time that he was advanced to the more important post of maestro at St. Mark's in Venice. His genius was of the revolutionary and experimental order; and the

limitations and refinements of the old choral music were little to his taste. Even in his works for voices alone he endeavored to obtain dramatic and theatrical effects, and used more harsh and striking chords than had been usual in choral music. His success in this line was much less marked than in his works for the theater. The first two of these, "Arianna" and "Orfeo," which appeared in 1607, at once made him the most prominent of living composers. The former is lost, all but a fragment—the latter has survived complete, and gives a clear indication of the direction in which the art was moving. Monteverde in this shows daring and force in the treatment of his subject. He uses a large group of instruments for his accompaniments and ritornelli, with a certain crude sense of effect. As in the works of Peri and Caccini, there is a very large quantity of formless recitative, and very little that is constructively definite; but he evidently endeavored to intensify the dramatic situations by the character of the music, and to follow the varying shades of feeling expressed in the dialogue by characteristic intervals and harmonies.

He also had a considerable instinct for histrionic music, and worked rather for stage purposes than for purely musical effect. These early operas of his were written for special occasions, such as the marriage of the Duke of Mantua's eldest son; but he lived long enough to witness the opening of public opera houses in Venice by Manelli and Ferrari (1637), and wrote his last two operas, "L'Adone" (1640) and "L'Incoronazione di Poppea" (1642), for them. His singular preëminence has put the works of his contemporaries into the shade. But the "Dafne" of Gagliano,

which was first performed in Mantua, and published in Florence in 1608, deserves to be remembered as representing a higher artistic conception of the form of art than the earliest examples.

The line of oratorio was worthily carried on by Giacomo Carissimi, a composer of powers in some ways equal to Monteverde's, and gifted with more artistic judgment and reserve. He was the first master of the new school who brought the experience of a thorough training in the old artistic methods to bear upon the new forms of art; and his oratorios, such as "Judicium Salomonis," "Jephte," "Jonas," and "Baltazar," contain really fine choruses, as well as most expressive and well-written solos, and many features which show a considerable sense of dramatic effect. He also wrote several secular cantatas for solo voice, and motets and masses and other Church music. He lived till 1674.

In his time the budding German school was brought into contact with the new Italian movement through Heinrich Schütz (1585-1672), who came from Saxony to study under Giovanni Gabrieli (1557-1612), at St. Mark's in Venice, early in the seventeenth century. He here became acquainted with the theories of the new school as well as with Gabrieli's own original experiments in direct musical expression by choral and instrumental means; and when he went back to Germany he gave characteristic evidence of his Teutonic love of the mystic and pathetic as well as of his Italian training in his oratorio "The Resurrection" (1623), and in his noteworthy settings of the "Passion" according to the four Evangelists, and in various psalms. He also set a German translation of Rinuccini's drama

of "Dafne," which had served Peri as a libretto in the earliest years of the new movement.

The earliest composers of mark who profited largely by the opening of public opera houses were Monteverde's pupil, P. F. Cavalli (1599-1676), and Carissimi's pupil, Antonio Cesti (about 1620-69). They both show the influence of their masters, as the former had the greatest instinct for stage effect and the latter the more general musical instinct.

Cavalli wrote an enormous number of operas. At least twenty-six are still preserved in the library of St. Mark at Venice. The most famous was "Giasone" (1649), which contains a few strong points of dramatic effect and some characteristic and forcible passages of declamation. His later works indicate the tendency toward definite forms, and he even produced examples of the familiar aria form. His fame spread to foreign countries, and he was summoned to Paris, in 1660 and 1662, to superintend the performance of his "Serse" and "Ercole amante" for certain court festivities.

Cesti practically represents a later generation, for though he was busy with opera writing at the same time as Cavalli, his general standard of art shows a decided advance in all departments. His treatment of instruments is much freer and more effective; his general style of writing is more mature; while his sense of tune and construction is so good that he takes rank as one of the most successful melodists of his time. Among many excellent operas his best was "Orontea," which was brought out in 1649 in Venice, for the opening of one of the new theaters, and maintained a vigorous popularity for thirty years. "La Dori" (1663)

and "Pomo d'Oro," written for the Viennese court, also contain excellent music. He also wrote many cantatas for solo voices, which contain charmingly melodious arias.

A noteworthy contemporary of these composers was Legrenzi (born about 1625), who was maestro di capella at St. Mark's in Venice from 1685 to 1690, where he did good service by reorganizing the instrumental forces into something resembling the scheme of modern orchestras, and wrote a number of good operas.

One of the most interesting figures in the musical history of the century was Alessandro Stradella. He also was a pupil of Carissimi's, and his powers excited the imagination of his contemporaries to such an extent that he became the hero of one of the most remarkable romances in musical history. He was undoubtedly a composer of great powers, which are shown in his oratorio "San Giovanni Battista," by very free treatment of instruments, well and clearly designed arias, fine and broad choruses, and a considerable power of dramatic expression. His work shows the artistic thoroughness of the Carissimi school, combining respect for the old choral traditions with mastery of the new artistic theories. His work is more mature than that of any other composer of the century before Alessandro Scarlatti, and is rather suggestive both of his style and of Handel's.

CHAPTER XIX

GENERAL DEVELOPMENT OF OPERA IN EUROPE

Differences of the Music-Drama in France and Italy—Monteverde's Traditions Continued in France by Lulli—English Music and Purcell—German Opera—Scarlatti and the Neapolitans—Handel—Italian Opera Supreme.

THE new movement, which gave birth to modern opera and oratorio about 1600, soon branched out into two distinct lines, which have maintained their characteristics till the present day. The first prominent representatives of these were Monteverde and Carissimi. The former stands at the head of the modern composers who study effect more than art; the latter at the head of those who study art more than effect. Monteverde ostentatiously rejected the traditions of his predecessors, to leave himself free to carry out his dramatic ideals. Carissimi endeavored to make use of the accumulated wisdom of earlier generations to guide him to the fittest artistic expression of his musical ideas.

The traditions of Monteverde were handed on to his pupil Cavalli (1599-1676), who became the foremost operatic composer of his time; and by him they were introduced into France, whither his great reputation had penetrated. But the characteristics of French opera were different from the ideals of the Italians, being founded mainly on ballet and spectacular dis-

play. The Italians in those days cared little for ballet; and to make Cavalli's operas palatable to French audiences, ballet airs had to be supplied. The task fell to the lot of Jean Baptiste Lulli, a young man who had been sent from Italy to the French court and had ingratiated himself with King Louis XIV by his talent for supplying dance music for the "mascarades," in which the King and his court took pleasure in dancing. Lulli was by this means brought into direct contact with Cavalli's works, and the experience stood him in good stead when he came to write operas some ten years later. In the meanwhile he kept in touch with the stage by writing incidental music to several of Molière's "Comédies ballets," in which he himself sometimes acted; and by composing "divertissements dansés," in which line he had made considerable success as early as 1658 with "Alcidiane."

The foremost French composer of the time was Robert Cambert (1628-77), who is sometimes described as the first composer of French opera. He made his first appearance with noteworthy success in a work called "La Pastorale," in 1659, which is described in the language of the time as "the first French comedy in music." It was followed by "Ariane" in 1661. In 1669 Louis founded the "Académie Royale de Musique" for the performance of operas and gave the management into the hands of Perrin, who, being a kind of poet, provided the librettos and associated Cambert with himself as composer; and they produced "Pomone" with success in 1671.

Lulli, however, had the ear of the King, and persuaded him to abrogate Perrin's rights and hand them over to him; giving him sole power for the perform-

ance of opera in Paris. Cambert, by this means, was driven out of France and took refuge at the court of Charles II, where he remained till his death in 1677.

Lulli then began his important operatic career with the pasticcio "Les fêtes de l'Amour et de Bacchus" in 1672, and followed it up with his first complete opera, "Cadmus," in 1673. From that time till his death, in 1687, he continued to supply operas year after year; the most noteworthy being "Alceste" (1674), "Thésée" (1675), "Atys" (1676), "Bellérophon" (1679), "Persée" (1682), "Phaëton" (1683), "Amadis" (1684), "Roland" (1685), and "Armida" (1686). The last was "Acis et Galatée" (1686). The scheme of his operas was well contrived for spectacular effect, apparently on the same plan as that adopted in Cambert's works. The plays were interspersed with ballets and choruses, and scenes in which a number of persons were effectively grouped on the stage; and the development of each act shows considerable power of artistic management and insight for stage effect, which are made the more available by the allegorical character of the subjects. The best features of the works are the overtures, which are solid and dignified, and the many fine passages of declamatory music, which comprise some high qualities of dramatic expression. Lulli's work is immensely superior to Cavalli's in technical mastery of resource; its drawbacks are the heaviness and monotony of his instrumental accompaniments, and his carelessness of artistic finish. He had no rivals in France, and left no one capable of immediately carrying on the development of French opera. But he set his seal upon the form of art, and French opera has maintained its distinctive features ever since. He

had a very keen eye for business, and left a fortune of 800,000 livres behind him when he died in 1687.

The influence of the French style became powerful in England when Charles II was recalled to the throne in 1660. He brought with him from foreign countries an enthusiasm for it, and when he restored the establishments of the chapels royal he endeavored to replace the grand old style of Tallis and Byrd and Gibbons, for which he had no taste, by the music of viols, and solos, and things generally of a livelier cast, like French music.

Most of the singing men and organists and composers of the old régime, such as Captain Cook and Christopher Gibbons and W. Child, were not sufficiently in touch with the new movement to supply him with what he wanted. So he took advantage of a manifestation of great talent among some of the choir-boys of the Chapel Royal to send one of the most gifted of them, Pelham Humfrey (born 1647), to France to learn his business there. After a year or so this boy came back thoroughly imbued with the French style, and became a fit leader to the younger generation of composers, represented by John Blow (1648-1708) and Michael Wise (born about 1648, died 1687), who were among the choir-boys of the same standing as himself. Unfortunately Humfrey himself only survived to the age of twenty-seven, and made no more than a beginning, with some singular and sometimes interesting experiments in Church music. But among the choir-boys of the next generation appeared the remarkable genius Henry Purcell (1658-95), who readily assimilated the influences of the new movement, both in its French and Italian aspects, and in the short space of the thirty-

seven years of his life produced an enormous quantity of music of every kind, both instrumental and vocal, comprising operas, songs, sonatas for strings, suites, and Church music.

England had already at this time a distinct type of stage piece associated with music, which became the model of the occasional early experiments in opera. A kind of entertainment called a masque had been popular at court for many generations. All the Stuarts were fond of theatrical performances, and in Charles I's reign the court constantly entertained itself with such masques, in which the Queen and her ladies and little Prince Charles took part. The words of these works were written by the most distinguished poets, and the music by the ablest musicians attainable. These performances occurred annually almost up to the outbreak of civil war. Among their characteristics is a certain literary flavor, and a preponderance of fanciful elements over dramatic; and these qualities reappeared in the operatic experiments which were made after the Restoration.

It was in music for plays, operas, and dramatic scenes that Purcell's highest genius was ultimately shown, and the tradition of a national style, which had been manifested in the music of the earlier masques, was revived. But the legend hitherto universally accepted, that Purcell's career began with music for the theater, has recently been discredited through the careful and exact researches of Barclay Squire; for although he undoubtedly wrote music for "Theodosius" and "The Virtuous Wife" in 1680, his admirable music for various plays which were first performed shortly before that time has been considerably antedated, because it

was evidently written for later revivals. It was not till about 1688 or so that opportunities for exercising his genius in connection with the stage became more frequent.

When Purcell died, in 1695, he left the country without any composer of sufficient powers to carry on the work he had so well begun, till the advent of Handel in 1710 put a new aspect on affairs. Purcell's style is very individual, and his powers most comprehensive; but the immature state of music at the time when he lived, as well as the absence of good models in the new style of art, militates against the general equality of his work, and prevents his holding as high a position in public favor as his genius deserves.

Germany shared the same fate as England at this time, as far as the establishment of any characteristically national opera was concerned. For though many composers took in hand the form of art known as the Singspiel, and though Reinhard Keiser (1673-1739) produced no less than 116 operas, mostly for his theater in Hamburg, no one was able to maintain a characteristically German quality of work, and in the next generation opera in Germany fell under the spell of the Italian style.

In Italy the highest position among opera composers at this time was held by the great Alessandro Scarlatti (1659-1725). He was a pupil of Carissimi, and carried on the artistic traditions of the line of art he represented.

His first opera, "Gli Equivoci nel Sembiante," came out in Rome in 1679. But most of his works were written for Naples, and with him began the great days of the Neapolitan school, whose composers were cele-

brated for the excellence of their writing for the voice.

In the course of his career Scarlatti produced over 100 operas, most of which have been lost. Those that remain show great advance on the work of his predecessors in maturity of technical workmanship and style. The instruments are much more effectively and freely used, the arias are better balanced and better developed, and his fund of melody is richer and more varied. He also did his art signal service by frequently adopting a form of instrumental overture in three or four movements, which was the ultimate source of the modern orchestral symphony.

The drawback of his type of opera is the constant and wearisome alternation of recitatives and arias, which latter are always in the same form, with a leading portion and a contrasting portion, and a "da capo," or simple repetition of the first portion to conclude with. Scarlatti was doubtless not the inventor of the form, but he used it with monotonous persistence, to the detriment of his works as wholes.

He was the last Italian of the early period who occupied the foremost place in the world as an operatic composer. In succeeding generations the German composers learned their art in the school of the Italians, and for some time maintained preëminence as writers of Italian opera.

The first to wrench the scepter from the hands of the Italians was G. F. Handel (1685-1759). When, in 1710, he went to England, that country was sorely in need of a man of sufficiently comprehensive powers to supply the fashionable world with operatic performances. But he did not at first devote much of his time

to opera, as he had to attend to his duties as kapellmeister to the Elector of Hanover (afterward George I), and to his duties as kapellmeister to the Duke of Chandos at Cannons. Later he accomplished a vast amount of operatic work.

The period of his oratorio work slightly overlaps the operatic time. The greater part of the works by which he is best known were produced after the long effort of his operatic career was over.

His operatic works form the climax of the first stage in the history of opera. In plan they are much the same as Scarlatti's; and though his arias are characterized by a greater wealth of melody and a greater resource of treatment and expression, the same monotonous alternation of recitative and aria ruins the general effect of the works. The materials in detail are often superb; and though he played into the hands of the singers, who were already beginning to feel and show their power, he did not fall into the degree of empty conventional insincerity which characterized the works of the writers of Italian opera in the next generation. His position was that of a caterer for the public, but the quality of what he gave them was intrinsically worthy of his great powers. (See the biography of Handel in another section of this series.)

Meanwhile the popularity of opera in Italy evoked a perfect flood of fairly artistic works by a great variety of composers, all of whom had more feeling for suitable writing for solo singers than for dramatic effect. The influence of the Neapolitan school, of which Alessandro Scarlatti was the greatest representative and progenitor, became enormous. Most of the leading composers were either pupils of his or pupils of his

pupils—such as Gaetano Greco—or pupils of his successor, Durante (1684-1755). Among those were Leonardo Leo (1694-1746), a composer of really solid and notable powers; Leonardo Vinci (born 1690, poisoned 1732); Niccolo Porpora (1686-1766); David Perez (1711-78); Niccolo Jomelli (1714-74); Domenico Scarlatti, Alessandro's son, and famous as a player on and writer for the harpsichord (1683-1757); the writer of native Neapolitan opera buffa, Logroscino (1700-63); and the short-lived but brilliant G. B. Pergolesi (1710-36). The composer who enjoyed the widest European fame was Adolph Hasse (1699-1783), a German, who began his career as a singer, and learned the arts of Italian opera under Neapolitan influences, and spread the subtle seductions of its easy fluency with too much success throughout his own country. He married the famous singer Faustina Bordoni. Among the few prominent Italian composers who were not of the Neapolitan school, Steffani (1655-1730), Lotti (1667-1740), Caldara (1678-1768), and Galuppi (1703-85) honorably represented Venice; and G. Bononcini, Handel's rival (1672-1752), and Sarti (1729-1802) came from Bologna.

The stiffness and formality of the Italian grand opera were very happily relieved by the influence of the opera buffa and the light pieces called "intermezzi," which were performed between the acts of the grand operas, act for act alternately. Their light humor and gaiety maintained a happy savor of human nature which the solemn and mechanical complacency of the grand opera tended to obliterate. Among the most famous of these was the "Serva Padrona," by Pergolesi, in which the source of much of Mozart's lighter

style in the humorous situations of his operas may plainly be traced.

Music in France at this period had no great artistic importance, and only one name of conspicuous interest makes its appearance. J. P. Rameau (1683-1764), the son of the organist of Dijon Cathedral, was intended for the law, but he determined to devote himself to music, and gave his attention at first to musical theory, and wrote an important treatise on the subject; notwithstanding which, he kept his artistic freshness sufficiently unimpaired to write very successful operas in the later years of his life. His first was "Hippolyte et Aricie," which came out in 1733, and met with great opposition in Paris. "Castor and Pollux" appeared in 1736, and his most important work, "Dardanus," in 1739. He was a man of character and originality, and the genuine verve of his musical ideas cannot be gainsaid. It is shown very happily in the dance tunes with which his operas are interspersed, which are remarkably spirited and vivacious.

About the middle of the century Italian opera buffa was introduced into Paris by an Italian company. It was much opposed on the ground that it was not French, but the French composers imitated the style and improved upon it, and from this source sprang that most successful form, the opéra comique of later days.

CHAPTER XX

ORATORIO IN THE TIME OF BACH AND HANDEL

Different Lines Taken by Italians and Germans—Passion Music in Germany—Bach's Predecessors—His Choral Works—Italian Influence upon Handel—His Oratorios.

THE Italians enjoyed the distinction of giving the start to oratorio, as they did to most of the other forms of modern musical art; but, after their composers had developed it to the excellent artistic standard of Carissimi and Stradella, a blight seems to have settled on it, and it rapidly became even more mechanical and pointless than contemporary opera. There were many composers who were fully capable of writing effective and fluent choruses, such as Colonna (1640-95), Lotti (1667-1740), Durante (1684-1755), and Leo (1694-1746), but they reserved their powers in that line for their psalms, hymns, masses, and motets, and submitted to the public preference for solo-singing and fluent melody so far as to reduce the choral part of oratorios to a minimum, and to seek for their effect mainly in strings of formal and conventional arias. It remained, therefore, for other countries to develop this great form of art to its highest standard of interest and artistic completeness.

The mood of Germans was eminently favorable. They had more appreciation of choral effect, and regarded the oratorio form with much more serious feel-

ings than the Italians. Moreover, it happened that the form which they especially cultivated lent itself naturally to very serious and earnest treatment. Italian oratorio dealt with a variety of subjects; sometimes Old Testament heroes, sometimes allegorical personages, sometimes famous saints. But German religious intensity showed itself by laying hold of one subject, and concentrating almost all its fruitful energy on the story of the Passion, as told by the four Evangelists. The source of their treatment of the subject was the traditional mode of reciting the story in Holy Week so as to give it more telling effect; by distributing the words of different characters to different readers, and giving the utterances of the masses of people to the choir, which went technically by the name of the "turba." John Walther wrote a musical setting of the tragedy on such lines as early as 1530. Heinrich Schütz followed with a very interesting and expressive treatment of the "Resurrection" in 1623, and of four "Passions" later in his life. More advanced stages of art are shown in settings by Giovanni Sebastiani in 1672, and Funcke in 1683, and by Keiser in 1703. The art of dramatic choral-writing was meanwhile developed in the kindred form of Church cantatas, by such masters as Tunder, Buxtehude, Johann Christoph Bach and Johann Michael Bach. The Italian aria form was also imitated by German composers, and introduced with effect into the settings of the "Passion"; so that by the time of Johann Sebastian Bach (1685-1750) the artistic scheme was tolerably complete; and no man was ever more ideally fitted to treat a subject at once mystical and dramatic with the highest intensity and genuine sincerity.

Bach wrote his first setting according to St. John in 1723, just before his move from Köthen to Leipzig. Beautiful and sincere as this work is, it falls considerably below the great setting of the "Passion" according to St. Matthew, which is far the noblest and most expressive example ever produced. In this complete state of the form it is noticeable that it takes the nature rather of a religious exercise than of a mere musical and dramatic entertainment. The story itself occupies comparatively small space, being told in the recitatives allotted to the Evangelist and the other characters, and in the short dramatic outbursts of chorus. What marks the form as ultra-German is the manner in which each step of the tragedy is weighed upon and brought home to the hearer and worshiper by the poetical reflections given either in the form of expressive arias or in the chorales, in which latter the audience in earlier days had been accustomed to take part. These are introduced at each step of the story, and serve to emphasize each successive situation; the whole being rounded off by the great reflective choruses which come at the beginning and end of the complete work. In Bach's hands the result is one of the most pathetic and deeply imaginative works in all the range of music. It was too characteristic and serious even for the German general public of that time; and its performance was restricted to Leipzig in the eighteenth century, and ceased altogether for a time at the beginning of the nineteenth. Mendelssohn revived it at Berlin in 1829, and the first performance in England was that under Sterndale Bennett in 1854. Bach wrote at least two more settings of the "Passion," but they have been lost. The rest of his sacred choral works

consist mainly of the numerous Church cantatas written for weekly performance in Leipzig, the superb motets, the Magnificat in D, the great B minor mass, and the "Christmas Oratorio" written in 1734, which is really a series of cantatas for Christmas day, New Year's day, New Year's Sunday, and the Epiphany.

Handel, at the beginning of his career, came under similarly serious influences. He set the "Passion" as early as 1704, and employed in it the highest resources of choral effect and solos. But when he went to Italy he fell in with the Italian taste in oratorio for a time; and in the two examples of oratorio which he produced for performance there—the "Resurezzione" and the "Trionfo del Tempo e della Verita"—he reduced the choral portions to a minimum. He nevertheless learned much from the Italians in the art of smooth and fluent writing for chorus, and put it to excellent use at a later period.

Masques had long been popular in England. They were theatrical entertainments in which the interest was more literary than dramatic; the poems of which were contrived to serve for pretty pageants, enhanced by choruses and solos and incidental music. The general aspect of Handel's "Acis" and "Esther" shows that he followed the usual scheme of masques in them, the main difference being that as he was far the greatest and maturest composer who wrote music for anything of the nature of an English masque he naturally expanded and enriched the individual movements almost beyond recognition. In its more primitive form it had served as the model for experiments in English opera; in this more expanded form it also served as the principal model upon which the English form of

oratorio was designed. The continuity is the easier to follow because till Handel's time the English people had never troubled themselves about oratorio at all, and its place in the scheme of English music was void. The manner in which the void came to be filled has something of the character of a chapter of accidents; but the accidents are quite coherent, and the fact that "Esther" was at first called a masque and later on an oratorio serves to unite the two types conclusively together.

The year 1738 marks the decisive turning of Handel's mind toward the oratorio form, for in this year he produced both "Saul" and his most monumental work, "Israel in Egypt." In "Israel in Egypt" he used music by Stradella, Gaspar Kerl, and Urio, and many movements from a Magnificat which was probably by Erba, though some people cling to the belief that it may be an early work of Handel's own. A great deal of the borrowed portions is distinctly dull, but what remains of Handel's own is so supremely fine that the oratorio as a whole is likely to be always regarded as Handel's most important achievement.

His most famous work, "The Messiah," differs from his other oratorios in its abstract nature, and the predominance of the reflective element gives it an affinity to the German form of Passion music. It is much more of an act of worship or a glorified anthem than a dramatic oratorio. This also evidently suits English moods, and though it did not lay hold of public taste at once, it seems now to be more firmly rooted in the national affections than any other musical work whatever.

The departure of two such great masters as Bach

and Handel left the musical world very blank. They had summed up the possibilities of choral music so far, and, till instrumental music had developed a great deal, there was not sufficient field to give another great composer a chance, and the oratorio form almost completely collapsed for a long time. Arne and Boyce (both born in 1710) produced some artistic oratorios with distinctly English qualities about them, and Arne left a permanent mark upon the nation by his admirable tunes, such as "Rule Britannia" (1740) and "Where the bee sucks" (1746). His most successful oratorio was "Judith" (1773). Arne died in 1778, Boyce in 1779.

In Germany, Karl Philipp Emanuel Bach, who was keenly in sympathy with the modern tendencies of art, and excelled equally in symphonies and sonatas, produced two really interesting oratorios, "The Israelites in the Desert" (1775) and "The Resurrection and Ascension of Christ" (1787). Both of these works are designed on lines similar to those of the German Passions, and both are most significant in the qualities which show the progress of the art of instrumentation.

In Italy oratorio ceased to have any significance, and Church music became for the most part conventional and operatic. Italian composers wrote fluent counterpoint in their choruses, but their Church works have a singular lack of point and character. Besides those mentioned at the beginning of the chapter a few merit reference: Astorga (1681-1736) for his charmingly musical and expressive "Stabat Mater"; Marcello (1686-1739) for his famous psalms; Pergolesi (1710-36) for his "Stabat Mater."

CHAPTER XXI

THE PROGRESS OF INSTRUMENTAL MUSIC UP TO THE TIME OF JOHANN SEBASTIAN BACH

Early Instrumental Music—In England—In France—Couperin—Organ Music in Italy—Frescobaldi—In Germany—The Great Italian Violinists—Suites and Sonatas—Handel—J. S. Bach—Domenico Scarlatti.

THE history of instrumental music divides naturally into three well-defined periods. The first extends from the early experiments in the fifteenth and sixteenth centuries up to the time of J. S. Bach, the second up to Beethoven, and the third till the present day. They are each marked by consistent distinguishing traits; the first by contrapuntal methods akin to those of choral music; the second by the development of pure harmonic forms of the sonata order, which are shown in their highest perfection in the sonatas and symphonies of Beethoven; and the third by a striving after greater freedom than the pure sonata forms seem to allow, or an extension of its scheme by intellectual devices, and new kinds of contrapuntal methods; and by more decisive adoption than formerly of ideas and programmes as the basis of art.

In the early days of the first of these periods modern instruments were not available. The stringed instruments played with bows were the various viols—treble, mean, tenor, viola da gamba, and violone or double

bass. And for this set a quantity of music, both in the shape of dance tunes and of movements imitated from choral canzonas and similar choral works, was written. Lutes of various sizes were conspicuously popular and useful, and the style of music written for them has permeated many types of more modern music written for other instruments. The position now occupied by the pianoforte was held by the harpsichord and the clavichord, and an immense quantity of music of permanent value was written for them in various countries.

All the forms of instrumental music then known throve in England in the time of the Stuarts. The last and greatest representative of this early English school was Henry Purcell, who had the advantage of knowing something of French and Italian models. His most important instrumental compositions are the suites or lessons for harpsichord and two sets of sonatas for strings. These sonatas are on the regular Italian plan familiar in Corelli's works. The admirable dance music he wrote for various plays ought also to be counted as representative of his skill as an instrumental composer.

Instrumental music throve also in France in those days, and early showed distinctive traits. The familiar inclination of the French for expressing their feelings by gestures has its counterpart in their predominant taste for dance rhythms in music and their love for ballet on the stage. Their own particular form of opera, which was set going by Cambert and Lulli, was mainly founded on ballet and kindred kinds of stage effect. Lulli no doubt gave considerable impulse to French instrumental music by the profusion of dance

tunes he wrote for his operas. And he did good service to art by the type and style of overture he adopted, which was followed by Handel in the overtures to his operas and oratorios, and by other composers in the same line even in quite modern times, such as Spohr and Mendelssohn.

The department of instrumental music in which the French especially excelled was that of music for the harpsichord. Among the early masters was Jacques Champion de Chambonnières, who was harpsichordist to Louis XIV in the early part of his reign, and published harpsichord music in 1670. A collection of "Pièces de clavecin," by Le Bégue, also deserves mention, which was published in Paris in 1677. The greatest of the French school was François Couperin (1668-1733). He wrote a profusion of little movements full of grace, fancy, and character, grouped into sets called ordres, such as are now commonly called suites. He showed his most solid gifts in his allemandes, sarabandes, and preludes, and his lighter and more popular vein in his rondos, and the numbers of pieces with fanciful names which generally formed the latter part of these ordres. He is the prototype of an essentially French school, which has continued till the present day to supply the world with little pieces based on some dance rhythm, or a title which explains and supplies the motive of the pieces.

Couperin also wrote a book called "L'Art de toucher le clavecin" (1717), which is a most invaluable and complete explanation of harpsichord playing in its prime, and is often referred to by him in editions of his compositions as "Ma méthode." Similar to Couperin's works are the many pieces for harpsichord by

J. P. Rameau (1683-1764). His first "Book of Pieces for the Clavecin" came out in 1706. The plan of his suites is much the same as Couperin's, comprising a few solid movements at the beginning and a number of lively tunes and rondos in the latter part. There is even more directness and point about some of Rameau's picture-tunes than Couperin's, and the connection with the stage is more obvious, inasmuch as some of those which are still familiar to modern pianists appear also as ballet pieces in his operas.

Before the end of the sixteenth century organs had arrived at a fairly complete state. It was natural that the associations of the organ should cause organists to imitate choral works in their compositions; and they improved upon them first by introducing a great variety of turns and runs and ornaments. These ultimately developed into a special kind of composition, somewhat like the products of extemporization, consisting mainly of runs, accompanied by simple successions of chords. This form was commonly known as a toccata; and though crude and elementary, it has considerable historical importance as one of the first of the large musical forms which established a sort of individuality, as an instrumental composition independent of choral models. Its earliest representative composers were Andrea Gabrieli (1510-86), and his famous nephew, Giovanni Gabrieli (1557-1612), and Claudio Merulo (1533-1604), all of whom were organists of St. Mark's in Venice.

The most important of the early northern organists was Jan Pieterszoon Sweelinck, organist of Amsterdam (1562-1621). His work, consisting of fugues, variations, toccatas, is marked by a considerable in-

ventive gift, and talent for speculation, which were remarkably helpful to the progress of his branch of the art. He was the prototype of the northern group of organists, some of whom, such as Reinken and Buxtehude, were among the models of J. S. Bach. The greatest of the early organists, and the first who arrived at any real maturity of style, was Girolamo Frescobaldi (1583-1644), organist of St. Peter's at Rome. His works comprise some of the earliest examples of well-developed fugues of the modern kind, as well as specimens of all the forms known in his time; which show that he had great mastery of resource and inventiveness, as well as firm grasp of artistic principles.

The earliest of the great German organists was Samuel Scheidt, born in Halle in 1587. He wrote a large quantity of remarkable music for his instrument, and died 1654. Soon after him came Frescobaldi's pupil, Froberger, who was born early in the seventeenth century, and died 1667. He was even more important as a writer of harpsichord music than for his organ music: since he adapted the methods of the organ composers to the smaller domestic instrument, and was a special prototype of J. S. Bach in that respect. Caspar Kerl, who is thought to have been a pupil of Carissimi and of Frescobaldi, was born in 1628. A composer of greater scope was George Muffat, who not only wrote effective and genial organ music, but also some excellent suites for strings. He died in 1704. Johann Pachelbel (1653-1706) was especially successful as a composer of "choral vorspiele," a very characteristic form of German art. Reinken (1623-1722), another very remarkable musician, was organist of Hamburg

for sixty-six years; the Danish organist Dietrich Buxtehude (1637-1707) was the most brilliant and interesting of this group of composers and exercised considerable influence on J. S. Bach.

The most important and fruitful line of instrumental music emerged from the obscurity of indefinite experiment into the light of a promising dawn in Italy in the latter part of the seventeenth century. The name with which the decisive awakening of violin music to life is always rightly associated is that of Arcangelo Corelli (1653-1713). In his time the art of violin-making was brought to perfection. Niccolo Amati was his senior by many years, and Antonio Stradivarius and Joseph Guarnerius, the two greatest of violin-makers, were his contemporaries. Corelli represents the essentially solid and expressively musical school of violin-playing. He was in nowise greatly expert in mechanical difficulties, but the traditions of his solid style have been handed down from master to pupil through successive generations of famous players till the present day. His works consist entirely of sonatas and concertos for stringed instruments, with accompaniment of figured bass for archlute, or harpsichord, or organ. The first set, consisting of twelve "Sonate da Chiesa," was published in Rome in 1683; the second set, twelve "Sonate da Camera," in 1685. The distinction between these Church and chamber sonatas is important, since the former represent (in an antiquated disguise) the modern abstract sonata, while the latter represent the dance suite. The whole of his compositions amount to no more than five sets of such sonatas and a set of concertos. What gives them their permanent attraction is their artistic equality and fluency, combined with

simplicity, sweetness, a vein of poetic expression, dignity, and an admirably even flow of easy part writing. He set the seal of an evenly balanced individuality upon his works in such a manner as to make them one of the landmarks of musical history.

Immediately after his time the great Italian school of violinists bloomed into wonderful vigor and perfection—several of Corelli's own pupils occupying an important position among them, such as Somis (1676-1763), Locatelli (1693-1764), and Geminiani (1680-1761). Other great players, more or less independent of Corelli, also made their appearance, such as Veracini (1685-1750) and Vivaldi (born in the latter part of the seventeenth century, died 1743), and Tartini (1692-1770). The school continued to flourish till the days of Mozart and Beethoven, and their works and deeds belong mostly to the second period of instrumental music, as their compositions are mainly of the sonata kind, and illustrate harmonic principles. Vivaldi, however, occupied a peculiar position, both as the early representative of the brilliant school of players and as a writer of a great number of concertos for stringed instruments, which served as the models to J. S. Bach for his compositions of that description.

Among early German violinists must be mentioned H. J. F. von Biber (1638-98). He was a famous performer and a worthy composer, and published a set of sonatas as early as 1681.

Handel's position in respect of instrumental music is comparatively unimportant. His most famous instrumental composition is the first set of lessons or suites, which came out in 1720. As types of the suite form they are irregular, and combine features both of

Church and chamber sonatas of the Italian kind. The former is illustrated by the number of fugues, which correspond to the canzonas in the early Church sonatas; while interspersed with regular accepted dance tunes are sets of variations, which are unusual features in such works. The next most familiar are his violin sonatas and his organ concertos, which are mainly on Italian lines, and in their way admirable. The least familiar are his many concertos for orchestral instruments, which again are based on Italian models, and do not look as if he had taken much pains with them. Several are made up for occasions out of movements from other works, such as oratorios and operas; and movements have sometimes been used at least three times in different works. They are generally instinct with Handel's usual vigor and breadth, but occupy no very important position in musical history.

The position of J. S. Bach in relation to instrumental music is in strong contrast to that of Handel. Handel wrote most of his instrumental music for occasions, Bach chiefly to find the most perfect artistic expression of his ideas in the various forms of instrumental art existing in his time. He studied the works of all the recognized masters of different schools so minutely and carefully that his works became the sum of all the development hitherto attempted in instrumental music. He always applied himself in accordance with his opportunities. In his younger days, when organist of various towns, he studied organ works and the performances of Buxtehude and Reinken, and Georg Boehm. In his first important post as organist at Weimar, he composed a great part of his famous organ works, and some of his best Church cantatas. When,

in 1717, he was made kapellmeister to the Prince of Anhalt-Köthen, who had a special taste for instrumental music, he devoted himself specially to that branch of art, and it was at that time that most of his important work in instrumental music was done.

In all Bach's most successful instrumental compositions his leaning toward the methods of the old school is evident. The elasticity and expansiveness of such old forms as the fugue, the canzona, the toccata, and the early type of fantasia made them more attractive to him than the sonata types, which seemed to limit the range of harmony and modulation. He very rarely attempted anything important in regular sonata form, and when he did the result is not very characteristic of him. He must therefore be regarded rather as the culminating representative of the polyphonic period of instrumental music than the forerunner of the harmonic period, whose representatives, until Beethoven's time, almost ignored both his music and his principles. (See the biography of Johann Sebastian Bach in another section of this series.)

Among composers who distinguished themselves in Germany in the early stages of instrumental music the following must also be remembered: Johann Kuhnau (1677-1722), Bach's predecessor as cantor at the School of St. Thomas, who led the way in composing both sonatas and suites for clavier; Johann Mattheson (1681-1722), Handel's friend, who wrote suites and several very valuable works on music; August Gottlieb Muffat (born about 1690, died in 1742), who wrote a large quantity of instrumental music of various kinds. And the survey will not be complete without reference to that unique figure the Italian Domenico Scarlatti

(1683-1757). He was a son of the famous Alessandro, and in the earlier part of his life followed much the same career as his father, writing operas and Church music. The direction in which his special gifts of harpsichord-playing lay was not fully appreciated by Italians, but after 1721 he settled in Lisbon, and found there and at Madrid a congenial audience among the people of the court; and it was this encouragement which induced him to produce the mass of his harpsichord music. Only thirty pieces were published in his lifetime, under the name of "Exercises for the Gravicembalo"; but altogether he produced several hundreds. In later times they are always spoken of as sonatas, and for their self-dependent nature they are rightly so named, though they only consist of one movement apiece. They are remarkable as being among the first works of the kind in which neither the fugue principle nor dance rhythms are essential features. They are based on very definite ideas and a grouping of keys similar to that found in modern sonata movements of the completely harmonic type; and his manner of repeating phrases again and again has its counterpart in Mozart's works. His devices of execution have been imitated by great writers for the pianoforte up to the most recent times.

Kokiu (Japan) Erh H'sien (China) Apache Fiddle (North America) Rebab (Arabia, Syria) Kemangeh (Persia, Arabia, Northern Africa)

Viola d'Amore (Europe) Sarungi (India) Sarangi (India) Violin (Europe) Thro (Burma) Sarinda (India)

STRINGED INSTRUMENTS OF THE VIOL TYPE

CHAPTER XXII

THE PROGRESS OF INSTRUMENTAL MUSIC IN THE EIGHTEENTH CENTURY

The Great School of Italian Violinists—The Clavier Sonata—In Italy—In Germany—Karl Philipp Emanuel Bach—Rise of the Symphony—Alessandro Scarlatti Again—Stamitz—Haydn—Mozart—Nature of Changes in the Latter Half of the Century—Sonatas—Quartets, etc.

IT is from the Italians that our modern style of instrumental music springs. Their inclination for simplicity of design and for easing the labor of attention seems to have led them, first of all people, to cultivate those simple kinds of harmonic contrast upon which the whole system of modern instrumental music rests. The contrapuntal style of art which culminated in the works of Bach and Handel was full of vigor and variety, but it showed signs of being toned down into more easy and obvious moods, in the choral works of even such early Italian masters as Leo, Durante, and Colonna; and this tendency is shown in a more marked degree in instrumental works such as the concertos of Vivaldi. Early in the eighteenth century composers of Italian operas and of Italian instrumental music moved in the same direction. The writers of operas simplified their airs to the utmost to satisfy the taste of their indolent audiences. They made them as much as possible on one uniform pattern, in which simple con-

trast of the harmonies of tonic and dominant was essential to success; and they planned their overtures and preliminary symphonies on much the same principles.

The great school of Italian violinists, whose artistic aims were much higher and nobler, were insensibly drawn in the same direction, and conveyed their ideas more and more in uniform harmonic designs. Some of them introduced allemandes and gigas, and other movements more characteristic of suites, into their sonatas, but even these soon became more and more harmonic in character and more distinctly uniform in plan. In Corelli (1653-1713) the contrapuntal style was still predominant; in the works of his pupils and immediate successors the balance began to lean toward the harmonic style. Passages founded on chords made more and more frequent appearance in them, and so did those figures of accompaniment which are among its most decisive indications.

The great school of Italian violinists came to its zenith very quickly. Corelli's style was noble and pure, but his technical resources were limited. His immediate successors extended the technical resources of the instrument, and adopted a much more modern style of expression. The eldest of his most famous pupils was Somis (1676-1763), who was born in Piedmont, and became a pupil first of Corelli and afterward of Vivaldi. He settled in Turin, and is considered the head of the Piedmontese school. Among Somis's most famous pupils was the Frenchman Leclair (1697-1764), who began life as a ballet-master and writer of ballet music. He attracted Somis's attention while acting in that capacity at Turin, and

under his guidance developed into a great violinist. Nevertheless he had not the good fortune to win any high position as a player, though he left some admirable sonatas of the Italian type.

A more famous pupil of Corelli's was Geminiani (1680-1761), a man of great abilities, but gifted with a temperament so excitable and ill-regulated that it prevented his attaining the position as a performer which his powers seemed to warrant. He, however, immensely enlarged the technique of the instrument, both by his compositions—such as sonatas and concertos—and by his teaching. His compositions were considered extremely difficult, and are not exactly child's-play even now, despite the advances made in technique; and they often present strikingly modern features of harmonization and expression. He also wrote a very valuable book on violin-playing which was far ahead of its time. He went to England in 1714, and spent a great part of his life there. One of his most famous pupils was the Englishman Dubourg (1703-67), who from 1728 was leader of the Viceroy's band in Dublin, and in that capacity led the orchestra on the occasion of the first performance of "The Messiah," in 1741. It was in his house that Geminiani died. Another famous pupil of Corelli's was Locatelli (1693-1764), who was born in Bergamo, settled in manhood at Amsterdam, and made a great reputation as a virtuoso. Some of his compositions are often blamed for artificial effects which are purely eccentric; but he was also capable of writing really admirable music, as his violin sonatas sufficiently prove.

In the same generation appeared, if report speaks truly, one of the greatest violinists of the world. This

was Giuseppe Tartini (1692-1770). He was a Florentine by birth, and first studied law, but some matrimonial complications caused him to hide for two years in a monastery at Assisi, during which time he devoted himself to music and taught himself the violin. Soon after leaving the monastery he happened to hear Veracini in Venice, and was so struck with his own shortcomings by comparison that he went to work again for another two years in Ancona. Padua ultimately became his home. He was a man of large feeling and cultivated mind. As a player his style is said to have been particularly noble and expressive, and his sonatas of the Italian type—thoroughly harmonic in plan—are the best of all that fine group of highly artistic works; especially the famous "Trillo del Diavolo," and the one in G minor known as "Didone abandonnata." Tartini was one of the first musicians to draw attention to some acoustical phenomena known as "combination tones," which he called "Terzi tuoni." His influence was mingled with the direct Corellian traditions through his pupil Pugnani (1727-1803), who was also a pupil of Somis.

This famous violinist and teacher was born in Piedmont, and traveled in many European countries giving concerts. He wrote a good deal of violin music, and had a very famous pupil in the person of Viotti (1753-1824). Viotti was also of Piedmont, and studied under Pugnani in Turin. Later he traveled with him, and after that settled for some time in Paris, occupying himself mainly with teaching; for, though an extraordinarily fine performer, he greatly disliked playing in public. When the French Revolution came to its crisis, he crossed over to England, and led at various

concerts in London, including some of those at which Haydn's symphonies were first performed. He is particularly notable for the large quantity of violin music he wrote, comprising concertos, quartets, duos, etc., which, though not of any great mark as actual music, are so admirably suited to the nature of the instrument and range over so wide a variety of technique that they are particularly valuable for teaching purposes.

His pupils, Rode (1774-1830) and Baillot (1771-1842), were famous representatives of the French branch of this school, all of whose members occupy an honorable position in the history of art and did most valuable service in furthering it.

In the department of clavier sonata the Italians were not so prominent, since their best composers of instrumental music were more attracted by the singing qualities of the violin. But they exerted much influence on its character and history, partly because the operatic style was more frequently used by composers of clavier sonatas than violin sonatas. The great Italian violinists wrote their sonatas for themselves to play; the writers of clavier music too often wrote their sonatas for fashionable pupils, whose tastes were mainly in the operatic direction. In the generation after the famous Domenico Scarlatti Italy was fairly well represented. The opera composer Galuppi wrote many sonatas for clavier, which have excellent points, and another of the best writers of the early clavier sonatas was Paradisi (1710-92), who was born in Naples, but settled in London, where he brought out a successful opera, "Phaëton," and a set of sonatas for "gravicembalo," as the harpsichord was sometimes

called. Among these are some of the best examples of the early sonatas—neat, elegant, finished, and well balanced, and very clear and complete in form. Of less enviable fame is Alberti (died 1740), an amateur and a good singer, who published a set of sonatas which became popular. These contained such a profuse amount of one particular formula of accompaniment that it has been generally known in later years as the Alberti bass.

The clavier sonata was cultivated with greater musical success by the Germans. They, in their turn, were not so highly successful as violinists, and rather preferred the keyed instruments; perhaps because they were less attracted to melody than to harmony. Bach's sons and pupils were distinguished for their works of this order, more especially the second son, Karl Philipp Emanuel (1714-88). Like all the representatives of his generation, he was affected to a certain degree by the Italian influence, springing from the universal popularity of the Italian opera throughout Europe. But he kept more of the artistic vigor and genuineness of his father than any of his brothers and contemporaries. He wrote an immense number of sonatas, which are the best representative works of their kind in the interval between the days of Bach and Handel and the time of Haydn; and it was his sonatas which Haydn specially studied in early years as models for his own efforts in the same line. He also wrote some very curious, and sometimes interesting, experimental works, in a fantasia form, full of abrupt changes of time and strange modulations, and long passages without any bars; also some excellent and vigorous symphonies, the "symphony"

being at that time like a prelude or "invention." He contributed, among his other services to art, an invaluable treatise on the way to play keyed instruments. His youngest brother, Johann Christian Bach (1735-82), also made a considerable mark as a composer of instrumental music. He was only fifteen when his father died, and felt his influence least among the brothers. He went early to Italy and was for a time organist of Milan Cathedral. Later he settled in England and obtained a great position, both as a fashionable teacher and as a composer of sonatas, symphonies, and operas. His style was ultra-Italian. He is sometimes called the English Bach, and sometimes the Milanese Bach. He exerted considerable influence on Mozart, who made friends with him when he went to England as a youthful prodigy. Many other composers added to the enormous mass of clavier music without greatly furthering the cause of art, though without discredit to themselves. Some few clung to the traditions of the ancient school, and wrote solid works of the suite order, and toccatas and fantasias and fugues; such as Krebs (1713-80), one of Bach's favorite pupils, and Eberlin (1702-76).

Meanwhile a much larger and more important form of art was progressing to maturity. In the next generation the general progress of mastery of design and instrumental resource advanced the standard of clavier sonatas and brought into being other forms of solo compositions, such as quartets, trios, etc. But the phases of progress which appear in them are all comprised in the progress of the grand form of the symphony, which is the highest and most perfect art-form of modern music.

The ultimate rise of this form of art was in the instrumental movements which were used for the overtures of operas. These were at first very short, and little more than simple and somewhat pointless successions of chords. By the latter part of the seventeenth century they had developed into a group of movements something like the group which at that time frequently constituted sonatas and concertos. In Alessandro Scarlatti's time this "sinfonia avanti l'opera" consisted of either three or four short movements, alternately slow and fast; and the order adopted uniformly by almost all composers soon after was a group of three, consisting of—first, a solid allegro, then a short slow movement, and lastly a light and lively allegro. In course of time these groups of movements began to attract some little attention, and as they improved in musical interest and artistic completeness they were often played apart from the operas. They were found very serviceable in this independent form, and to meet the demand an enormous number were produced by all manner of composers. They were usually scored for a group of eight instruments—that is, the complete set of strings and two pairs of wind instruments, such as two horns and two hautboys, or two horns and two flutes. Sometimes they were published as "overtures in eight parts," as were Abel's and Johann Christian Bach's, and sometimes as "symphonies in eight parts," as were Michael Esser's, Wagenseil's, Richter's, etc. The difference in name implies no difference in the works; as they might or might not have originally been attached to an opera.

The quality of the music was for the most part

very flat, common, and empty, and very little attempt was made at either refined phrasing or effects of instrumentation. But every now and then a composer tried to put something genuine into his work, and a most important step was taken by the violinist and composer Stamitz (1719-61). He became leader and conductor of the band of the Elector of Mannheim in the early half of the century, and, being evidently a man of taste, set about making the performance more refined and artistic. Burney speaks of him as discovering the effect of crescendo and diminuendo, "and that the *piano,* which before was chiefly used as an echo, as well as the *forte,* had their shades as well as red and blue in painting." From which it may be divined that in the dreary period between J. S. Bach and Haydn music of this kind had been played in a most slatternly manner. The effect of Stamitz's reform was very great. The Mannheim band won the reputation of being the best in Europe, and kept up its standard of excellence long enough (after Stamitz's death) to exert a powerful influence on Mozart.

In point of form all these early symphonies were distinctly harmonic, representing the same scheme as the movements of modern sonatas, with but trifling deviations. In the hands of German composers the primitive outline of the design was enriched by degrees and developed to a more artistic standard of interest. Karl Philipp Emanuel Bach alone took a line of his own, which was more akin to his father's method in concertos. He commonly adopted some striking principle of effect as his cue, and alternated his subjects irregularly, distributing the modulations

on quite different principles from those in his sonata movements, except in so far as the movements made digressions from the starting key, and returned to it finally at the conclusion to establish the unity. His material, at all events in the symphonies of 1772, is immensely more vigorous and animated than that of his contemporaries, and his treatment of instruments original and often ingenious. In the end his manner of dealing with form was abandoned by other composers for the sonata type, which was almost universally adopted. In that respect his younger brother, Johann Christian, stands more in the direct line of the descent of modern symphony, though his musical material is less vigorous. However, he had some excellent ideas of orchestral effect, and similar gifts were shown by the Belgian Gossec (1733-1829), who pushed the cause of instrumental music vigorously in Paris in the middle and latter half of the century.

But all these numerous early writers of symphonies were completely put in the background before the end of the century by Haydn and Mozart. For Prince Esterhazy and his guests Haydn wrote an immense number of symphonies, and found encouragement to make them more artistic, by raising the standard of the ideas and developing the resources of orchestral effect; and by degrees his fame began to spread abroad. But he did not come to the perfection of his mastery of this great form of art till Mozart had come and completed his share of active work and passed away. (See the biography of Haydn in another section of this series.)

In his early days Mozart might have learned from Haydn; in the latter part of his life Haydn learned,

willingly, from him. Haydn's fame by about the end of Mozart's life had become universal, and several efforts had been made to induce him to come to England; but he would not desert his master or his duties. In 1790 Prince Esterhazy died, and then Haydn went to London, and the twelve symphonies which are the crowning glory of his life-work were written. His long experience and the example of Mozart lifted him to his highest level, and he produced for Englishmen the series that shows to the full all the natural geniality, humor, vigor, and simple good-heartedness which were his characteristics, in those terms of perfect art which, though not so delicately poised and finished as Mozart's, are fair parallels in point of artistic management.

The nature of the change which had been effected in the symphony since Haydn began to write may be summarized. In his early days it was a type of rather slight artistic importance. The ideas used were generally rather vapid, the design of the movements simple but uninteresting, the group of instruments used small, and the method of their employment blunt and crude. By the time Haydn and Mozart arrived at the climax of their work the group of instruments was much more highly organized, the element of powerful tone in trumpets and drums had been added, and the group of wood-wind was expanded in many cases to the full variety of flutes, oboes, clarinets, and bassoons, which is familiar in the full modern orchestra. Both composers used clarinets rarely, but they knew how to use them with effect. The whole treatment of the orchestral forces had become transformed. In early times the

wind instruments were occasionally used for solo purposes, and often did no more than crudely fill up and reinforce the mass of sound; but in their later symphonies they were used with much more independence, as well as with far more coherence and sense of balance.

Then the ideas and subjects themselves had attained to a much more definite character and a much higher degree of beauty and individuality; and the resources of modulation had been applied to enhance and give extra variety and interest to the designs of the movements. The old number of three movements had in many cases been increased to four, and the relation of the movements to one another in point of contrast as well as coherence of style had become artistically perfect. It only remained for Beethoven to apply all these elements of art to the expression of a higher range of ideas and completely to balance the idea and the form in which the idea was expressed, so as to make one of the most perfect forms of art the world has ever seen.

The connection of Haydn and Mozart with the development of the clavier sonata and such forms of solo art as the quartet is of great importance, and the progress they made moves on parallel lines with that of the symphony. In the clavier sonata the improvement made by them was mainly in the matter of design; for before their time a group of only two movements was common, and the design of the movements was at once less concise and less interesting than it had become at the end of the century. But the improvements made were not by any means only owing to them. A very large proportion of their

sonatas were of but slight importance, and were probably written for the use of pupils; and a lack of decided musical purpose in them makes them on an average of less historical importance than either Philipp Emanuel Bach's work in their own time or Domenico Scarlatti's in the earlier time.

The progress of the type of works for keyed instruments has been always rather dependent on the feeling for effect which composers, who were also performers, gained from their practical experiences; and Haydn and Mozart, being limited by the nature of the instrument for which they wrote, which was mainly the harpsichord, did not expand the limits of the form so notably as they did in other branches. It was not till the improvement of the pianoforte came about that the new and richer opportunities for effect thereby offered gave a fresh spur to the development of this form of art.

With the quartet for solo strings the case was different; such a form hardly existed before their time, and their work with it was such as almost to complete its artistic maturity in the course of one generation. The growth of the system of harmonic design, and the development of the technique of the violin, were the causes that brought about the perfecting of the quartet and kindred forms of chamber music. Haydn's first quartet was written in 1755. It was of slender proportions and no great interest. But he soon infused vigor and artistic value into his later works of the kind, giving the instruments more and more independence, and finding how to express more with such simple means. He continued composing them all through his life and was actually engaged

on one when his powers finally broke down with failing health in old age. Mozart took up the form at a higher level, and though he did not do so much for its earlier development, he set even a nobler seal upon it in the superb group of six which he wrote in 1782 and dedicated to Haydn. It shows how great an advance they represent upon the average standard of the time that they were generally received with dislike even rising to indignation. To later generations they appear as perfect in artistic moderation as they are in mastery of design and skill in the use of the four solo instruments.

There were several other composers who did good service in Haydn's time in the development of the quartet form; notably Boccherini (1740-1805), who was a native of Lucca, and early made a great reputation as a composer and violinist. His facility in composition was extraordinary, and he produced altogether over 360 instrumental compositions, of which a large number are quartets and quintets. The German Dittersdorf (1738-99) was a most voluminous and successful composer in every branch of art.

The progress of modern instrumental music caused it to branch off into various lines, such as concertos, divertimenti, overtures, and numerous varieties of chamber music; but these all developed in their respective lines parallel to the greater and more central types to which they are akin; each received good measure of attention from the greatest composers, and before the end of the century progressed from the cruder types of the early days into most finished and artistic products, the most important phases of development being in all cases the improvement of

design, and the more appropriate, independent, and characteristic use of the instruments. The highest phase of all in instrumental music had still to wait till the early years of the nineteenth century for its consummation.

CHAPTER XXIII

OPERA IN THE TIME OF GLUCK AND MOZART, AND IMMEDIATELY AFTER

Reaction from the Formality of Italian Opera—Gluck's Aims—Difference of Mozart's Position—"Idomeneo" a Turning-point—German Aspirations for a National Opera—"Entführung aus dem Serail"—"Nozze di Figaro"—"Don Giovanni"—"Die Zauberflöte"—Progress of French Opera—Spontini.

ABOUT the middle of the eighteenth century the indolence of fashionable audiences and the short-sighted egotism of popular singers had reduced the opera to such a state of monotonous and mechanical dullness that a reaction was inevitable. Slight changes and improvements were frequently attempted by various composers, but the name with which the most definite attempts at general reform are associated is that of Christoph Willibald Gluck (1714-87).

Gluck's position in musical history, particularly with respect to the development of the opera, is very similar to Wagner's in recent times. His indictment against contemporary opera made much the same points as the modern composer's. But he labored under the obvious disadvantage of living at a time when the development of resources, such as are characteristic of regular modern music, was yet slender. The arts of orchestration were only just beginning to

be understood, and the arts of dramatic expression of the modern type were both limited in amount and but vague in general character, while the subtler possibilities of modulation were hardly thought of. Like Wagner he was not gifted with musical powers of any very exceptional caliber to start with, nor with any marked individuality, but he developed what he had with exceptional success under the influence of great dramatic and poetic sympathy and insight. His later work is unique in style and in the dignified sincerity with which he treats great and pathetic situations. Even when he had to compromise with popular taste, as in the excessive use of the ballet which was required by French audiences, he succeeded in making it tell as part of the dramatic effect. And the same may be said of his use of arias, which he dispensed with as much as possible in favor of a shorter and more concentrated form of solo, while he raised the recitative whenever possible to a high degree of dramatic interest.

A fact which marks his position well is that he is the earliest opera composer who can arouse the sympathies of a modern audience, in strong contrast to the utterly defunct formality of Hasse, Galuppi, Jomelli, and hundreds of other composers of that class.

Mozart's career as an opera composer overlaps that of Gluck. The early operas of Mozart only serve to illustrate the strength of the Italian influence to which he was subjected. The European fame which Mozart attained when almost a child led to his having plenty of invitations to write operas, and he wrote them in rapid succession.

In his early years he could hardly have heard any

operas which were not of the conventional Italian pattern, and indeed very little music of any kind which did not come from the southern source. This Italian influence was paramount through his lifetime, and illustrates the shifting of the highest level of musical composition from the vigorous North German Protestantism of Bach and Handel to the region in which Southern German gaiety and expansiveness adopted the Italian style and forms of music, and ultimately developed them to the very highest point which the new school could attain. The completeness of this change is chiefly owing to Mozart's genius, but it was not till the flood of prosperity which attended his youth had given place to the troubles and crosses of the latter part of his short life that he produced works of sufficient mark to change the course of history. (See the biography of Mozart in another section of this series.)

His unfortunate visit to Paris in 1778 marks the turning-point of his career. On his way there he made a prolonged stay at Mannheim, and became intimate with the traditions of Stamitz and with a group of sincere and earnest-minded musicians, of whom Cannabich was foremost; and here he heard, possibly for the first time, really refined performances of orchestral music, which clearly made a great impression upon him.

He arrived in Paris just in the heat of the excitement about Gluck and his rival Piccinni, and though he stayed several months he never gained any notice, or any opportunity of distinguishing himself except by the production of his Parisian symphony. This was by far the best he had yet written, but in Paris

it did not bring him any particular repute, and, failing altogether to get a chance of producing an opera there, he returned to Salzburg in 1779.

His disappointments and troubles in Paris, where as a child he had been wildly petted and caressed, may have had something to do with his being so little affected by the controversy about Piccinni and Gluck. It is clear that Gluck's works made no great impression either upon his style or his methods of composition; but the trials of the journey and the change from the too easy success of his early years to the severe struggle of his maturity seem to have braced him to a higher standard of work. After a pause in opera-writing for some years, he was invited to write an opera for the carnival at Munich in 1781. For this occasion he wrote "Idomeneo," which is the first example of his more mature style. It is particularly noteworthy for the very rich and elastic treatment of the orchestra and for the effective choruses which are introduced. Its success bettered his position somewhat, and was followed by a request from the Austrian Emperor for a genuine German opera.

The Emperor had long had it in mind to make an effort for the cause of National Opera, which had hitherto been in a very backward state. The vigorous efforts Keiser had made at Hamburg had collapsed with his death, and all Germany had been again occupied with Italian operas, frequently written by her own composers. The only German form which had a sustained popularity was that of the "Singspiel" or song-play, a rather insignificant kind of work, consisting mainly of an ordinary theatrical piece interspersed liberally with songs and incidental music, like

the English plays of Purcell's time and a little later. The most successful composers of such works (which were chiefly light and lively) were the following: Adam Hiller (1728-1804), who won considerable success with "Die verwandelten Weiber," a version of an English play, "The Devil to Pay," and with "Der Dorfbarbier," "Die Jagd," and many others. Dittersdorf (1739-99) was particularly successful in his "Doctor und Apotheker." Neefe (1748-98), Beethoven's master in Bonn, won success in the same lines, as did also Johann Schenck (1753-1836); and Kauer (1751-1831) is said to have written over 200 examples of this kind. It was for the development of a slender form of this sort into a type more worthy of being nationally representative that Mozart at the invitation of the Austrian Emperor produced his "Entführung aus dem Serail." It came out in 1782, and for once raised a Singspiel into the loftier region of first-rate art. It was the best work of its kind which Mozart had produced, and was too good for "Singspiel" audiences. The result was that Mozart received no encouragement to repeat the experiment for some time, and resumed the writing of Italian operas. His success in the Vienna experiments cannot be said to have been great.

"Figaro" and "Don Giovanni" will always remain the representative examples of Mozart's Italian operas, and are utterly different from the works of his predecessors in every particular which gives musical and artistic value. Mozart was not by nature a reformer like Gluck, neither could he have expounded a systematic theory. His reforms were the direct fruit of spontaneous genius and quickness of perception. In "Figaro" and "Don Giovanni" the plays are not

mere excuses for making collections of pretty tunes, but are amusing in themselves; and Mozart's quickness has made the music reinforce every point of the story, even to mere slight details of theatrical business, which he seems to have had in his mind while composing. The human interest in them is immensely assisted by the element of comedy which Mozart illustrated with unsurpassable skill in the style of the Italian opera buffa and the intermezzi. In his hands instrumentation rose for the first time to a condition of mature and complete art. He was the first composer who had a refined feeling for orchestral color, and in opera he used this faculty with a natural ease and readiness; while his general power and mastery of his craft enabled him to develop ensembles and finales to a degree of effectiveness and dramatic relevancy which no previous composer had approached. Gluck surpassed him only in intensity in the situations which were suitable to the peculiar cast of his poetic temperament.

Quite at the end of his career Mozart had one more chance to make a stroke for German art, and the stroke was lastingly effectual. Not long after the successful launch of "Don Giovanni" he was applied to by Schikaneder—a man who combined the gifts of actor, playwright, manager, and man of enterprise—to set a fairy play which he had put together, and believed would attract the genuinely German masses. This was "Die Zauberflöte" (The Magic Flute), a play which is certainly not easily intelligible to the uninitiated, but contained enough mystery and magic and opportunities for scenic display to attract a German audience. Mozart set it to music in a manner

which differs to a considerable degree from all his earlier works, as much of it is on a higher level. The peculiarity of the play has hindered its popularity in other countries, but Schikaneder rightly gauged its fitness for a thorough German audience, and the great success it ultimately won may fairly be said to be the definite starting-point of the successful development of the modern German music-drama, of which Weber, Beethoven, and Wagner are the foremost representatives.

A few contemporaries of Mozart deserve record for creditable and occasionally brilliant work in the operatic line. Sarti (1729-1802, organist of Faenza, 1748) produced his first opera, "Pompeo in Armenia," there in 1751; his best opera is said to have been "Giulio Sabino." He met Mozart in Vienna in 1784, and spoke of him afterward as a musical barbarian. Paisiello (1741-1815) belonged to the school of Naples, where he was a pupil of Durante. His music was elegant and successful, and was specially admired by Napoleon. He wrote a "Barbiere di Seviglia," which was so popular that when Rossini endeavored to get his setting performed the attempt was considered nothing less than presumption on his part and was at first vigorously hissed. Paisiello wrote in all ninety-four operas. Sacchini (1734-86) was also one of the Neapolitan school, and a pupil of Durante. He traveled to England and also to Paris, where he became very popular. His best operas were "Olimpiade," "Dardanus," "Œdipus," and "Tigrane."

The most brilliant member of this group was Cimarosa, born near Naples, 1749, and a member of the Neapolitan school. He early won reputation by his

lively intermezzi. His first opera was "Le Stravaganze del Conte," 1772, his most famous was the "Matrimonio Segreto," one of the best and most brilliant opera buffas ever written. It came out first in Vienna in 1792, the year after Mozart died. His most successful serious opera was "Gli Orazii e Curiazii." He lived till 1801.

Salieri (1750-1825), Gluck's pupil, is most familiarly remembered for the reputation he won for scheming to prevent Mozart's success, but it may be remembered as a set-off that he acted to a certain extent as Schubert's master, and was held in some respect by Beethoven, who actually took lessons from him. He superintended most of the music of the court and opera of Vienna, and wrote many successful operas.

The Belgian Grétry (1741-1813) also requires notice as a representative of the Parisian section of opera writers. He was a poor musician, but made success through a certain gift of tune and expression, and a delicate sense of humor. Born at Liège, he went to Rome for musical study, and became the despair of his master. But he was quite confident of himself, and in 1767 applied to Voltaire for a libretto, which was declined. He was the first representative composer of operas comiques, and wrote some fifty operas for Paris, of which "Le Huron" was the first (1768) and "Le tableau parlant," "Zemir et Azor," and "Richard" were the best.

Of Mozart's junior contemporaries, the most notable was Cherubini (1760-1842). He was brought up in the atmosphere of Italian music, but his disposition caused him to take a more serious view of

the art than most of his fellow-countrymen, and this has given him a position which is quite unique among them. His views were so extremely severe that he appeared pedantic even to Mendelssohn; but, notwithstanding, his works have a genuine freshness and vitality. He began opera-writing with "Quinto Fabio" in 1780. He went to England in 1784, and brought out some operas there, and finally settled in Paris in 1788. The first of his operas which won permanent fame was "Lodoiska," which came out in 1791. The light opera "Les deux journées" came out in 1800, and the famous "Médée" in 1797. These two represent extremes of different character, as the former is sparkling and bright and the latter a very severe tragedy. In both he succeeded equally well. His sense for dramatic effect was strong, but was always kept within bounds by a very sensitive taste, and his orchestration is often admirable. He was so much revered by musicians in Paris that in old age he was looked upon as a sort of autocratic censor.

Méhul (1763-1817) was a composer who held a great position in Paris about the same time. He was looked upon as the foremost French composer of the Revolution period. His best work, "Joseph," was his last, and came out in 1807. He had a genuine feeling for dramatic effect of a refined quality, and his orchestration was good.

Another composer of more striking caliber was Gasparo Spontini. He was born at Majolati in 1774, and educated at Naples. His first opera, "I puntigli delle donne," was brought out in Rome in 1796. His early works were in the light Neapolitan style. He went to Paris in 1803, but did not make the mark

he hoped for in the light style, and therefore changed his tactics completely for a style of the utmost grandioseness. "La Vestale" was finished in 1805, and first performed in 1807. The excellent libretto by Jouy was much in its favor, and the music is also remarkably fine. Spontini here displayed a great gift for rich orchestration, and a sense of broad and large effect, and a mastery of resource combined with a very considerable power of dramatic expression which give him a high place among composers. "La Vestale" thoroughly deserved the estimation in which it has since been held all over Europe. He followed it up by "Fernand Cortez," which is on much the same grandiose lines, in 1809. He was made conductor at the Italian Opera in Paris in 1810, and brought out Mozart's "Don Giovanni" for the first time in that city. His next large work was "Olympia," which occupied him many years, but did not succeed in Paris.

When he went to Berlin to manage operatic affairs as kapellmeister and general director of the music of the court of King Frederick William, he remodeled "Olympia" and brought it to a hearing there in 1821 with triumphant success. Unluckily for Spontini, Weber's "Der Freischütz" came out soon after in Berlin and took such a hold of the hearts of Germans with its thoroughly Teutonic flavor, that Spontini's supremacy was checked. He brought out several more operas, such as "Nurmahal" (1822), "Alcidor" (1825), "Agnes von Hohenstaufen" (1829), but by degrees he became very unpopular, partly owing to his autocratic disposition, and after a period of tension, in which he seems to have shown some force of

character, he finally left Berlin in 1842 and returned to Italy, where he died in 1851. He was a commanding and conspicuous figure, and his works have grand and impressive qualities. They belong to the class of French grand opera, and stand midway between the statuesque beauty of Gluck and the pomp of Meyerbeer, who was his successor in Berlin.

CHAPTER XXIV

THE PROGRESS OF INSTRUMENTAL MUSIC TO BEETHOVEN AND HIS IMMEDIATE SUCCESSORS

Rise of Pianoforte Music—Clementi—Cramer—Other Prominent Composers of Instrumental Music—Beethoven's Early Circumstances—Predominance of Sonatas among his Works—His Characteristics—Enlarging Principles of Design—Characteristic Expression—Programme—Hummel—Weber—Schubert—Spohr.

WHILE Haydn and Mozart were applying their great powers to the advancement of the highest forms of instrumental music, some very valuable work was being done in various subordinate branches by other composers and performers, of considerable though less comprehensive powers. The prominent position taken by the pianoforte in modern music gives special importance to the work of Muzio Clementi, who was the first composer to show a clear perception of the style of performance required by that instrument as distinguished from the old harpsichord. Till he applied his mind to the subject composers had mainly kept to the quiet gliding style suitable to the older instrument, and hardly realized the effects and contrasts which were obtainable by the more forcible and energetic treatment which was invited by the use of hammers instead of jacks as a means of producing the sound.

Clementi was born in Rome in 1752. He was solidly grounded in contrapuntal studies, and came before the public as a composer, with a mass, at the age of fourteen. He was brought to England by a rich amateur while still quite young, and made his first appearance in London in 1777; and with the exception of a few professional tours through Europe he remained in England for the rest of his life. He was of a practical turn of mind, and, besides establishing a very good position as a teacher and a performer and a conductor at the opera, he founded a pianoforte business, which still exists. He wrote a very large quantity of sonatas of very solid and artistic quality, but his best known work is the "Gradus ad Parnassum," a collection of his most excellent pianoforte studies, which he completed in 1817, when about sixty-five years old. He survived till 1832. The comprehensive quality and vigor of his work, and its perfect fitness for the pianoforte, justify his being called the father of modern pianoforte music.

Among his pupils the most important was J. B. Cramer, whose "Studies" hold so honorable a position among works of their class. They are more genial than Clementi's, though not so masculine—Cramer, like his master, was a thorough musician, and his insight into the requirements of the pianoforte is remarkably acute. He came of a family of musicians; and both his grandfather, as flute-player, and his father, as violinist, were members of the famous Mannheim band. He himself was born in Mannheim in 1771, but was brought to England by his father when one year old, and settled permanently in that country, where he also founded a music business, and

held a distinguished position as a pianist and a teacher. He died in 1858.

Another famous pupil of Clementi was the Irishman John Field (1782-1837), who was a very able pianist, and wrote a large quantity of pianoforte music, of which his nocturnes still enjoy the appreciation of musicians. He settled in St. Petersburg. Among those who did good service in developing the resources of the pianoforte was J. L. Dussek, born in Bohemia in 1761. He began his career as an organist, but ultimately became one of the greatest pianists of his time and enjoyed a European fame. He was for a time a pupil of Karl Philipp Emanuel Bach's, and wrote a large quantity of sonatas in a graceful and fluent style, which exerted no little influence upon some later composers for the instrument. He lived till 1812. His contemporary Daniel Steibelt had a considerable vogue as a player and composer and fashionable teacher in Paris and London successively. The date of his birth was 1755; he died 1823.

Among the prominent representatives of instrumental music of this intermediate stage, Ignaz Pleyel deserves mention. He was born in Austria in 1757, became one of Haydn's favorite pupils, and showed such good promise in early years as to have his quartets highly spoken of by Mozart. He wrote a large quantity of symphonies and chamber music, went to England for a time in 1791, simultaneously with Haydn's first visit with Salomon, and ultimately settled in Paris, where he founded a successful pianoforte factory. He died in 1831. Madame Pleyel, the famous pianist, was his daughter-in-law.

A composer who enjoyed great popularity for a

time was Adalbert Gyrowetz, born in Bohemia in 1763. He studied in Prague and then went to Vienna, where he received friendliness and encouragement from Mozart. His reputation was so good that he was engaged as a composer by Salomon at the same time with Haydn. He ultimately settled in Vienna and lived till 1850. So that having been born but a few years after Mozart, and having known him and Haydn intimately, he survived Mendelssohn and might have heard several of Wagner's operas. He also survived his own popularity. He wrote a large quantity of operas and cantatas and an immense number of symphonies and quartets. The symphonies are on a larger scale and more freely and intelligently scored than those of the previous generation, but they have not the distinction and artistic completeness of Haydn's and Mozart's, though they were sufficiently good for some of them to be passed off as Haydn's in Paris, till Gyrowetz went there and established his title to their authorship.

A family which did distinguished service in the cause of modern instrumental music was that of the Rombergs. Bernhard Romberg (1767-1841) was one of the earliest of great German cello players, and did a great deal to advance the technique of that instrument. He wrote quartets and a number of cello concertos, which are so admirably suited for the instrument as to be still valuable for teaching purposes. His cousin, Andreas Romberg (1767-1821), was a famous violinist and composer. He began his successful career as a player at the age of seven, and produced in the course of his life a great variety of compositions, such as operas, cantatas, symphonies, and quartets.

The greatest representative of pure instrumental music is Ludwig van Beethoven (1770-1827). His youth had none of the opportunities nor the brilliancy of Mozart's, and he developed slowly, in circumstances which forced him to get such musical education as he could by his own exertions. The music performed during his youth was not of the highest class, though of fair average merit of the time. Under the well-known theorist Albrechtsberger, after previous study, he worked energetically at counterpoint, fugue, and canon, with the result that his master declared him to be a very unsatisfactory and unpromising pupil. His relations with his fellow-musicians were not very friendly, for he thought poorly of most of them and did not disguise his opinion. But he won many ardent friends among aristocratic amateurs. The opportunities of Beethoven's youth had been singularly meager. He could have heard but very little choral music of good quality, and though his experiences were more rich in the line of operatic music, he could have heard very few operas that were better than second rate till he was nearly twenty; and his knowledge of orchestral works was equally limited, both through his living at Bonn and by the obvious fact that hardly any first-rate and mature symphonies existed before the year 1786. His musical education was also to all appearances very backward, but that may possibly have been a minor drawback, as he was forced to develop his own powers and find out his own way in art, and was thereby strengthened in individuality and character. (See the biography of Beethoven in another section of this series.)

The most obvious feature of his compositions as a

whole is the immense preponderance of works in the form of sonatas. At the beginning of his career he published thirty consecutive works, every one of which is in sonata form; and in the whole list of his works—including masses, songs, variations, fugues, cantatas, and an opera—more than one-half are of the same order. The explanation lies in the fact that the artistic progress of music for nearly two hundred years had centered round the development of harmonic forms, of which the sonata is the highest type; and Beethoven, as the most highly gifted musician of his time, endowed with the keenest feeling for design and expression, naturally adopted the form which afforded him the richest opportunities; and circumstances being in every way favorable, he carried the treatment of the sonata to the highest perfection of which that form of art seems capable. He infused into it a new element of meaning and expression, without losing hold of the perfect balance of the design, and he immensely enriched and widened the scope of art in all directions to make room for the force and variety of his ideas; so that in the end the lover of strong impressions finds all he longs for, while the worshiper of abstract perfection in art rests satisfied that Beethoven was essentially a master of form.

In his early period, up to Opus 50, the influence of the style of the previous generation is more obviously apparent. This period, lasting till about his thirty-third year, comprises his first two symphonies in C and D, three concertos, the well-known septet, and a number of fine sonatas, such as that in C sharp minor, Opus 27, that in A flat with the variations, the remarkably rich and interesting one in D minor, and the

superb "Kreutzer" sonata for pianoforte and violin. In some few of these, such especially as the last two, he gives a foretaste of his finest qualities; a variety and a scope, and a power for manipulating his design which no man ever showed before. After Opus 50 he passed into a new and more emotional and vigorous manner—the style of his best and happiest years. The mass of his best known and best loved works succeeded each other in rapid succession. They form a remarkable list, even if we consider only those representing his most important achievements up to about the year 1810, when he was forty years old.

Meanwhile he had been gradually passing under the influence of the two greatest trials of his life, which permanently affected his moods and character. The first and most obvious was his deafness. The other was the trouble with his nephew, which brought upon him lawsuits and many vexations. His work was for a time seriously interfered with, and constant worries caused him to become more morose and isolated than ever. His deafness reacted upon his art and more than ever intensified his originality and depth of thought, while his other troubles intensified his earnestness and style of utterance. To these two influences may be chiefly attributed the final change of his style, which began to be apparent soon after Opus 90 in such works as his E minor sonata (Opus 91) and his F minor quartet, and found its highest expression in the last five sonatas, the last quartets from Opus 127 onward, the great mass in D, and the final and greatest triumph of his life, the "Choral" symphony (Opus 125).

Beethoven was impelled to widen out and enrich his scheme in every respect. His thorough appreciation of

the pianoforte, with its new opportunities of effect, derived in a measure from the important adjunct of the pedal, caused him to adopt, in writing for that instrument, a much more powerful style, and to employ means which at once widened the range of sound and produced a far greater volume of it than had ever been heard or thought of before; while his instinct for harmonic variety and the effects which are obtainable by new and striking progressions and subtle use of modulation enhanced to the highest degree his power of expression. In his symphonies he adopted from the first a larger group of instruments than his predecessors—invariably including clarinets with oboes as an additional element of color—and he soon found out how to use the various instruments, wind, strings, and drums, with more genuine independence, and with more real sense of their respective characteristics, and a more perfect blending into one complete whole than his predecessors had done. In grouping his movements, too, he soon became more free than they had been. At first he adopted a scheme of four movements, but soon found that much was to be gained by varying their order, number, and character. In some of his finest sonatas he adopted a group of three movements, and even sometimes reduced it to two, as better adapted to give individual character to the complete work; while he sometimes extended the scheme to five movements, as in the "Pastoral" symphony. But he set his impress equally upon all the movements. His first allegros became more definite in character, and more closely knit by the use of short incisive figures instead of long melodious subjects; his slow movements passed out of the phase of being like the old opera arias into

the most romantic and impassioned forms, full of human feeling and even dramatic effect.

His last movements grew more serious and solid and dignified than had been usual with earlier composers, while in changing the minuet movement (which had represented the dance type in a graceful and uniform manner) into the scherzo, he gave to art one of the most vivid, characteristic, and effective of all modern art-forms—one eminently calculated to express his sense of humor, fun, wit, irony, and subtlety of thought; and at the same time supplying a much more complete counterpoise to the sentiment of the slow movement than had before existed in the group of sonata movements. The slow introductory movements he sometimes adopted were quite a new departure in art. Previous to his time such movements had been extremely limited in range of harmony, and mainly formal in character. He entirely transformed them by introducing remarkable modulations and interesting ideas and devices of form; and sometimes developed them to a high pitch of importance. The introductions to the "Kreutzer" sonata, to the symphonies in B flat and A, and to the overtures to "Leonore" Nos. 2 and 3 are indeed among the most wonderful of his achievements. In the internal organization of the larger movements a like power of expansion is shown in the wonderful episodes, and the unexpected digressions (which are always perfectly coherent to the design), and the novelty and interest and wide range of his codas.

His tendency toward direct and decided expression is marked by his frequent adoption of a recognizable purpose in composing his works, as illustrated most

remarkably in the "Eroica" symphony, in the "Pastoral" symphony, and in the two sonatas which bear distinct names. In the C minor symphony and the seventh in A an equally strong impression of something behind the music is apparent, and in all these respects he became the first notable exponent of the modern tendency toward what is sometimes called programme —which really means illustrating by music some definite conception, or circumstances which have a poetic or dramatic import external to the music itself. But with him the work never depends upon the programme for its effect, and he is careful to avoid attempting to paint scenes in musical figures; and some of those movements which are most obviously founded on an idea external to music are specially perfect and beautiful in form. He understood art too well by instinct to be misled into thinking that mere force, or vehemence, or definiteness of expression can make good works of art; and the greatness of his effects consists even more in the perfect management of the relative parts of his entire works, and their bearing upon one another, than in the mere ideas themselves.

His methods of composition were also very different from those of his predecessors, except J. S. Bach, for he rewrote and remodeled everything over and over again. Even his ideas were recast and reconsidered many times over before he was satisfied with them, and the contents of his numerous sketch-books bear eloquent testimony to his patience and self-criticism. His methods of work were much more like those of *littérateurs*, poets, painters, and sculptors than those usual with musical composers, and his works accordingly bear the marks of a higher degree of concentra-

tion and a wider range of expression and design; and the sum of the result is the richest and most perfect form of abstract instrumental art which exists in the whole range of music.

Contemporary with Beethoven, but representing an earlier state of art in many ways, was Johann Nepomuk Hummel (1778-1837). He had the great advantage not only of being Mozart's pupil, but of living for two years in his house. In his prime he was considered the most brilliant of German pianists, and had a very high reputation as a composer. He had a great talent for the ornamental part of music, and produced many large works which have a certain elegance and finish, but comparatively little substance. He exercised considerable influence upon many composers for the pianoforte in the succeeding generations, including Chopin.

The composers who came after Beethoven tended more and more to aim at direct expression of ideas external to music, but they immediately began to lose hold of full mastery and control of design. This is strongly noticeable even among his junior contemporaries.

Karl Maria von Weber (1786-1826) is chiefly important through the position he occupies as the first representative of true German national opera, in spirit and in method; but his instrumental music also has a position of some importance in history. He had great gifts, considerable sense of effect, and a highly strung and imaginative temperament. His sonatas illustrate the tendencies of modern instrumental music, in the skillful use of pianoforte effects, the scope afforded for the display of virtuosity, and the predominance of

sentiment over closeness and concentration of design. In such things Weber shows the insight of the performer rather than the musician, of the elocutionist rather than the genuine orator; but his methods and treatment of the instrument undoubtedly impressed very distinguished composers in later times, and his influence upon art in that respect cannot be gainsaid. His impulse for adopting a definite external idea is most strongly emphasized in his "Concertstück" for pianoforte and orchestra, written in 1821, which was avowedly written to illustrate a fanciful episode about a knight and a lady in the days of the Crusades.

His genius shone at its brightest in the management of orchestral effect, as illustrated most happily in his famous overtures to "Der Freischütz," "Oberon," and "Euryanthe." In his use of the characteristic qualities of tone of different instruments to illustrate special dramatic or poetic ideas he is one of the foremost of modern composers. He specially delights in things weird and magical—the music of the "Wolf's Glen," the magic music of fairies. In these things he expresses a trait of the Teutonic disposition, and also shows strongly the influence of the theater. Here again it is perceptible that the influence which raises him to his best achievement is a conception external to music, and not the spontaneous musical impulse such as commonly impelled composers before Beethoven's time.

The position of Franz Schubert (1797-1828) in the history of art is centered mainly upon his songs; but his position as a writer of instrumental music is by no means insignificant. His opportunities in youth were even less favorable than Weber's. His natural impulse

was to look for external inspiration in poems, and under such influence he was at his best, and produced magnificent songs in quite early years. His models in instrumental music were not of the best, and his early efforts in the line of symphonies are comparatively tame; but as his experience of music enlarged, he found the way to express his ideas more completely in instrumental form. He was always uncertain in the management and control of design, but ideas of every kind were always ready in profusion, and take the hearer with them by qualities which are more direct and more in consonance with modern spirit than such purely artistic considerations as beauty and balance of design.

Of all great composers Schubert is the one who depends most on the actual attractiveness of his musical ideas and his musical personality; and these qualities have exercised great influence upon many composers of high rank in later times. The charm lies far more in his spontaneity than in his power of development or mastery of form. Judged from the abstract point of view as absolute music, his works of the sonata order are often obviously redundant and imperfect in design and bear cutting without much injury. Schubert in his profusion attacked all branches of instrumental music, and the best of his works of this kind belong to his later years, when his experiences had been enriched by hearing more first-rate music, such as some of Beethoven's most inspiring works. He set his seal upon this branch of art especially by his last two symphonic works—the delightful fragment known as the "Unfinished Symphony" in B minor and the grand symphony in C major. These are the first orchestral

works on a large scale in which his genuine characteristic musical nature shows itself, not only in the ideas and the manner of treatment, but even in the scoring—which is quite modern in its effect. The B minor fragment was written in 1822, and therefore preceded Beethoven's Ninth symphony, while the C major symphony was written in 1828, after the appearance of that immense work; and the influence of Beethoven here appears most strongly, alike in the vigorous and full treatment of a large orchestra, in the characteristic scherzo, and in the romantic tendency of almost every movement. Of his other instrumental works the most impressive are the "Rosamunde" *entr'actes,* the quartets in D minor and G, the quintet in C, the octet, the pianoforte trio in B flat, and some of the sonatas. But it is also noticeable, as a sign of the times, that among the most permanently interesting are works which are definitely outside the circle of sonatas, such as the great fantasia in C, and some of the small impromptus and "Moments musicaux."

Ludwig (or Louis) Spohr (1784-1859), owing to the length of his career and the late date of the appearance of his most important works, seems to belong to a later generation than Weber and Schubert, although he was born before either of them. He showed his powers as a violinist very early, and, combining natural aptitude with singular perseverance, he rightfully won the reputation of being the greatest German violinist before he had long passed the years of his youth. His first large composition, a symphony in E flat, was soon followed by works in almost every form—operas, oratorios, cantatas, concertos, quartets, and symphonies. He wrote effectively, though not

always judiciously, for the voice, but his chief importance lies in his connection with violin music and orchestral music, and among his firmest titles to fame is his invaluable "Violin School."

In the matter of style he was quite out of sympathy with Beethoven, adopting a chromatic and sentimental manner which is curiously at variance both with his own personal character and the best spirit of his age. But his impulse was as much to seek inspiration and motive external to purely musical considerations as Beethoven, and he had a very predominant taste for new experiments.

Spohr's labors have a very wide range, but he is historically most important in matters connected with the violin and the orchestra. The perfection of his instinct for his own instrument gives his compositions for it very high technical value; while his skillful orchestration marks a distinct advance in the use of variety of color and effect of a modern kind. The influence of Mozart is more apparent than that of any other master, but his sentiment and his use of varieties of color for distinct ends are essentially modern. He was a man of strong character, and his reputation in his lifetime was extraordinarily high; but his style was too deficient in genuine breadth and nobility to exert much permanent influence on his successors.

CHAPTER XXV

MODERN INSTRUMENTAL MUSIC

Berlioz—Design—Programme—Instrumentation—Mendelssohn—Chopin—Polish and Parisian Influences—Schumann—Teutonic Disposition—Virtuosity—Liszt—Other Representatives of Instrumental Music.

THE most notable composers who were born in the early years of the nineteenth century illustrate in a marked manner the general tendencies of artistic progress in instrumental music since Beethoven. Hector Berlioz, born 1803; Mendelssohn, 1809; Chopin, 1809; Schumann, 1810; Liszt, 1811; Henselt, 1814; Stephen Heller, 1815; Raff, 1822; Rubinstein, 1830, all show a disposition to drop the sonata form, and to seek new principles of procedure and greater variety of design, to meet the requirement of new types of musical ideas, and new ways of looking at music.

The works of the first member of this group seem to emphasize most forcibly the tendencies toward "programme" and independence of form. But it must be observed that the French had never shown any aptitude for pure instrumental music, and needed the stimulus of external ideas to excite them to musical utterance. The stage was their natural field of artistic activity, and the only music they had succeeded in at all conspicuously was in some way connected with it, either as actual operas or as ballet tunes. The fact

that Berlioz wrote large instrumental works on theatrical lines is, therefore, less significant historically than the fact that a programme was so frequently adopted by Teutonic composers. All the traditions of classical art were distasteful to his eager and impatient temperament. He regarded them as superfluous, and sought to employ music of the largest caliber, with the most profuse resources of the orchestra, to express stories and human circumstances which struck him as likely to be effective and interesting in a musical dress; and he hoped to attain, by following the working and sequence of the extra-musical ideas, an orderliness and aspect of design which should satisfy the mind as well as the classical types of form and development which he gladly dispensed with.

His gifts were strongest in the direction of rhythm and color. His excitable disposition was particularly susceptible to the qualities of tone of instruments, and he set himself deliberately to develop remarkable effects of instrumentation, and succeeded so well that it has given him a unique place among the foremost representatives of modern art. The masters he worshiped were Beethoven—for the force of his expression—and Gluck—for his dramatic power and insight. He was also under the influence of Spontini to some extent, and, in a lesser degree, of Mozart. But he was more influenced by the style of their utterances than by their artistic principles. He always depended upon the stimulus of a strong programme for his guide in action. (See the biography of Berlioz in another section of this series.)

Though Mendelssohn's instrumental works are much less conspicuously of the programme order, his

position as an essentially classical composer intensifies the inferences which his attitude in instrumental music suggests. Of all his numerous and popular solo works for the pianoforte and organ, hardly one belongs essentially to the sonata order. He infused new life into the elastic and perennial forms of prelude and fugue, both for organ and pianoforte, and he produced one admirable example of the variations form in the "Variations sérieuses" (1841). He was conspicuously successful in what he called "Songs without Words," which are short characteristic pieces in various forms, written at different times in his life from 1830 till the end. He was equally successful in organ works, and it is specially significant that most of those which are called sonatas are so only in name, and rarely have anything of the typical sonata character or principle of design about them. He was less successful in his capriccios and fantasias for the pianoforte, for in them his taste for brilliancy is shown at the expense of the musical material. The same gifts of brilliancy are applied, with much happier results, in his concertos for pianoforte and orchestra in G minor (1831) and D minor (1837), and in the concerto for violin and orchestra (1844), which is one of the very finest of all his works. In pure orchestral music he appears at his best in the music for the "Midsummer Night's Dream." Though comprising a certain quantity of vocal music, the most important parts of this work are the instrumental movements, such as the overture, scherzo, and notturno, which are among the most characteristically effective of modern orchestral works.

For all his most successful symphonies he adopted

distinctive names. He wrote a great number in youth which have not survived. Only the thirteenth, in C minor, is occasionally played. The earliest which has maintained any hold on the musical world is the "Reformation" symphony, in which he endeavored to carry out something of a programme by the use of such features as the famous formula for the "Amen," used at the Roman Church in Dresden, and familiar to musical audiences in later days by its use in Wagner's "Parsifal"; and also by the use of the famous chorale of Luther, "Ein' feste Burg."

Mendelssohn was a classicist by nature, but even he fell in with the tendencies of his time; and though he was too wise to think weakness of design could be compensated for by programme or obviousness of meaning, he nevertheless in these most important cases allowed his inspiration to be impelled and nourished by a definite purpose.

The branch of chamber music is the one in which the traditions of the sonata persist most conspicuously. In combinations of pianoforte with other solo instruments, composers seem to find opportunities to do something new in that form which are less attainable in other branches of art. Mendelssohn was very successful in that line, and his trios for pianoforte and strings in C minor and D minor are among the most universally popular of all works of that class. His quartets, quintets, and octet for strings, though sometimes rather orchestral in style, are also favorite examples of that refined class of art.

Chopin was born less than a month after Mendelssohn. It illustrates the branching out of music into many different forms and styles that men so preëmi-

nent in art and yet so different in musical character should have been born so near together. Chopin is one of the most conspicuous representatives of the most modern type of music, for he is thoroughly independent of the conventions of classicism in art; but he is so far from being inartistic on that account, that the perfection of delicacy with which he applies all the richest resources of technique to the expression of his thoughts is almost without parallel. Moreover, though so specially notable as a master of the technique of performance, he really has musical thoughts which are worth expressing, and a genuine musical personality; and even the ornamental parts of his work—which form so important a feature in the stock in trade of virtuosi—in his case generally have real musical significance and beauty.

A great deal of the individuality of Chopin's music comes from the race to which he belonged and his early surroundings. His native country, Poland, had a long tradition of misfortune to look back upon; and nations in such circumstances commonly relieve their feelings in poetry and pathetic song. It appears to intensify the instinct for things imaginative, as well as racial characteristics. Chopin, who was born near Warsaw, imbibed the spirit of the Polish national music and dancing from early years, though their influence did not bear full fruit till experience had matured his powers. He began his career as a pianist, and before he was twenty had almost surpassed all rivals. He journeyed to Vienna and other musical centers, giving concerts, and finally settled in Paris in 1831, just at the time when that city was fermenting with romanticism in literature and art.

His compositions up to that time had comprised the set of studies, Opus 10, which are undoubtedly the finest examples of their kind ever written for any instrument, and some of the preludes, which are among the most interesting and poetical of his works. He had also written two concertos for his own use and a few movements representing or reflecting the style of the national dance music. But the mass of his mature and completely characteristic music was produced after he settled in Paris. Closer contact with musicians of high attainments, opportunities of hearing more music, and the romantic and intellectual ardor of the time widened his horizon and raised his standard, and he rapidly enriched the art with his great chivalric polonaises, the romantic ballades, the poetical nocturnes, the brilliant scherzos, the interesting and original sonatas, and many other types of very characteristic art. He uttered his thoughts with complete certainty only through the medium of the pianoforte. He never became master of orchestration even sufficiently to write the accompaniments to his concertos with due effect. But his work for the pianoforte is so marvelously perfect in its adaptation to the idiosyncracies of the instrument, that it becomes historically important on that ground alone. His work is not often great in conception, or noteworthy in design, but it is the spontaneous expression of a poetical, refined, and sensitive temperament, and his style has exercised an almost universal influence upon writers of pianoforte music since his time, except in the case of a few specially strong-natured composers.

The very next year after Chopin, Robert Schumann was born. He represents a phase of music as char-

acteristically modern as Chopin's, but of different quality. The points where the two composers touch is in the romantic and poetical character of their ideas, the warmth of color and richness of tone, and the strongly marked diversity of method from the old sonata type. They differ in depth of feeling and intellectuality. Chopin is at once lighter and more quickly sensitive—combining the poetry of the Pole with the alertness of a Parisian. Schumann is more reflective and intellectual, and saturated with Teutonic earnestness. Schumann indeed was the higher type of man, of purer aims, though of less brilliant skill. He fell under the influence of the romantic movement in German literature—especially under the spell of Jean Paul Richter—and he transmitted the figurative and metaphorical methods of this literature to his music.

Schumann's work was divided into a series of definite periods, as had been the case with Bach. He devoted himself at first mainly to writing sets of short and vivid pianoforte pieces, of wonderful variety of character and form. With these were interspersed a few works on a larger scale. In all lines he endeavored to find new and more elastic methods of applying musical art to the purposes of expression; and most of his pieces have definite names and special meanings, which are sometimes indicated by a verse of poetry. In the year 1840 he devoted himself mainly to song-writing. That was the year of his marriage with Clara Wieck. In the following year he wrote several symphonic works. The first which can be said maturely to represent him is that in B flat. It is the one of all his works which is most nearly on classical lines. In the second he tried experiments in new lines, and endeav-

ored to unify the whole work by using characteristic figures throughout. It was subjected to much alteration before it was finally published as symphony No. 4, in 1851. In the year 1842 he occupied himself mainly with chamber music, and produced two of his most popular works—the pianoforte quintet and the quartet in E flat, besides string quartets and other examples of the same order of art.

In later years Schumann addressed himself to choral music and completed the series of his great instrumental compositions with the fine symphony in C major (1845-46) and the one in E flat, known as the "Rhenish" (1850), and the music to "Manfred," the overture to which is one of his finest and most complete orchestral works. But fine and noble in spirit as these are, he set his seal most effectually upon works in which the pianoforte takes the most prominent position; and especially those in which he endeavored to develop a new scheme or method of artistic procedure, and to use music as a vehicle for poetical thought. Much of the music of his later years suffers from the gradual increase of disease in the brain which caused his death.

It would be hard to find a more conspicuous contrast to Schumann than Franz Liszt, who came into the world but a year after him. He is mainly important in musical history as the representative of the most advanced standard of pianoforte technique, and the most brilliant virtuoso of his instrument who ever lived. He, as it were, summed up the labors of all previous players and inventors of devices of performance, and crowned them by his own special gift for contriving new and yet more brilliant effects. In his

original compositions he was noteworthy as a prominent representative of radical theories for devising new principles of design and development; abandoning deliberately the classical principles of form, and trying to make movements intelligible by employing characteristic figures in a manner like the use of *Leitmotiven* by Wagner in music-dramas. His most important contributions to art in the line of programme music are the "Faust" and "Dante" symphonies and the thirteen symphonic poems, which are specially remarkable on the score of orchestral effect; for his sense in that direction is of a kindred nature to his instinct for pianoforte effect. His pianoforte concertos also are remarkable for their brilliancy and novelty of treatment, and so are his pianoforte studies. Although a great proportion of his works consists of transcriptions of songs, opera airs, and national tunes, these are noteworthy for the truly extraordinary and intricate skill with which the resources of the instrument are applied.

In the same year with Liszt was born Ferdinand Hiller, who was an efficient pianist, and a successful writer of pianoforte music, symphonies, and other kinds of music, of artistic but not very characteristic quality. He was a great friend of Mendelssohn's, but long survived him. He died in 1885.

As the pianoforte has become the familiar domestic instrument of the whole world it is natural that composers who aim at supplying music for it should spring up in legions. But not many have impressed sufficient individuality into their works to make them of any real historic importance. Among famous players of modern times Sigismund Thalberg takes high rank; in

his time he was thought worthy of being compared with Liszt himself. He was a year younger than that master, being born in Vienna in 1812. He had an inventive gift for pianoforte effects and technical feats similar to Liszt's, though on a smaller scale. His style was brilliant, but much quieter, and his compositions were proportionately tamer than Liszt's. They are, indeed, more considerable in quantity than quality, though some of his studies are happily conceived and refined in style. He died at Naples in 1871.

Of far more poetical and real musical temperament was Adolf Henselt, who was born at Schwabach, in Bavaria, in 1814. He was a pupil of Hummel, and became a very considerable pianist in his early years. He played with great success in St. Petersburg in 1838, and was made court pianist, and that capital became his home from that time till his death in 1889. He had a distinctly individual way of treating his instrument, both as composer and performer; obtaining great effects of sonority without vehemence, through the actual fullness and spread of his harmony and the genial warmth of his ideas. His works are few, confined to two books of études, some lyrical pieces, and a concerto. As a warm admirer of Weber he devoted great pains to editing and adapting his instrumental works to the capacities of the modern concert pianoforte.

Stephen Heller was born in Pesth in 1815, and is one of the most widely popular of pianoforte composers. He combined a wealth of graceful, poetical, and refined ideas with a very considerable sense of finish and a capacity to knit little movements into compact unity. Without being great, he certainly occupies an honorable position in his own field. He settled in

Paris in 1838, and rarely moved from there till 1888, when he died. His works are mainly études of a not very advanced standard of difficulty, and collections of short pieces known as "Promenades d'un solitaire," "Nuits blanches," etc.

Among representatives of instrumental music must also be counted William Sterndale Bennett, who was born in 1816, at Sheffield, England. He began his musical career as a choir-boy in King's Chapel at Cambridge, and his conspicuous talents caused him to be sent to the Royal Academy of Music, of which he ultimately became principal in 1866. He was an admirable and refined pianist, of a quiet school, and wrote a considerable quantity of delicate and artistic pianoforte music, including the sonata called "The Maid of Orleans," in which a programme is very definitely indicated. His works on a larger scale comprise some poetical overtures, such as "Parisina," "The Wood Nymph," and "Paradise and the Peri," and an effective concerto for pianoforte. He was one of the first Englishmen in modern times to develop any sense for orchestration. He died in 1875.

A conspicuous composer in all branches of instrumental music was Joachim Raff, born at Lachen, in Switzerland, in 1822. He began life as a schoolmaster, and was a man of culture and considerable general knowledge. From 1850 onward he enjoyed a remarkable degree of popularity all over Europe. He had a certain fund of poetry and romantic feeling, considerable instinct for effect, and extraordinary facility. He was a good deal in contact with Liszt, who was kind and helpful to him, and he avowedly allied himself with what was considered the advanced school of

those days. He was fond of giving names to his works, and endeavoring to treat them as poems. Of his ten symphonies several bear distinctive names, such as "Im Walde," "Lenore," "Frühlingsklänge," "Im Sommer"; but in reality they do not break away from the traditions of sonata form in any very marked degree. His orchestration is effective and full of color, and in many works of different types the texture is rich and elaborate, as, for instance, in his violin sonatas. His works in general show considerable gifts of invention, but are very unequal, both in style and intrinsic value. He died in 1882.

Anton Rubinstein, the Russian composer—the most poetical and imaginative of modern pianists—was a prolific writer in every branch of art, and gifted with genuine musical ideas. One of his chief characteristics was impetuosity, and it is possibly owing to this circumstance that he was more successful in ideas than in construction. His work resembles in those respects the literature of his great fellow-countryman, Tolstoi. Indeed, it seems to be the rule with the artistic work of Slavs that the power of creating intrinsic interest is considerable, but that the faculties which are needed for concentration and systematic mastery of balance of design are proportionately weak. This is equally true of the very national composer Tchaikovsky (1840-93), whose gifts were exercised with characteristic results in concertos and other forms of instrumental art. Mention should also be duly made of the Russian composer Borodin (1834-87), who illustrates the same impetuous ardor, combined with a sense for technical feats in pianoforte playing of the same brilliant and surprising order as Liszt's.

The one great representative of the highest forms of instrumental music in recent times was Johannes Brahms (1833-97). The austerity and sternness of his musical character caused the public to be very slow in recognizing him; though he had for constant champions such great exponents as Madame Schumann and Joachim. Brahms had no sympathy with the methods of the modern music-drama, nor with the theories of composers who attempt to apply those methods to instrumental music. He was at once a musical intellectualist and a man of powerful and concentrated feeling. He seemed to judge instinctively that self-dependent music is artistically intelligible only on grounds of design and development; and he applied all the artistic resources which the long period of musical development had made possible to the expounding of his musical ideas in lofty and noble symphonies, in splendid examples of all kinds of chamber music, such as pianoforte quintets and quartets, trios, string quintets and quartets, and other combinations of solo instruments. It must be confessed that his powers were so great that he found how to do something new and individual in the old forms of the sonata order.

He did not attempt symphonies till comparatively late in life, No. 1, in C minor, being Op. 68, and the date of its appearance 1876, though it was actually written much earlier. The second, in D, followed in 1877, a third and fourth in F and E minor followed in later years, as well as two fine, difficult concertos for pianoforte, one violin concerto, one double concerto for violin and cello, and two overtures. His treatment of the orchestra was austere but powerful; as though he disdained the subtle seductions of color, and used only

such grave and almost neutral tints as befitted the self-contained dignity of his ideas. He obviously eschewed programme even in pianoforte pieces; but his numerous capriccios, intermezzos, ballades, and rhapsodies are as full of genuine impulse as the best works of the programme composers, and are often very original in design. He is also one of the few great masters of the variations form—which is one that only the very greatest composers have excelled in—and has produced superb examples for orchestra as well as for pianoforte.

The branching out into variety of style and method which is so characteristic of the progress of music is illustrated by the increase of the influence of various national styles of expression upon notable composers. Hungarian music led the way in this respect, and influenced Schubert as well as Liszt and Brahms. Russian music followed, as above indicated, and in later times Norwegian and Bohemian music have come prominently forward. The former is conspicuously illustrated in the person of Edvard Grieg (1843-1907). He adopted in all his compositions certain fantastic and piquant traits of harmony, rhythm, and melody, which appear to be drawn from the national style of his country. He had a very happy gift for knitting his little lyrical movements into compact and deftly finished wholes, and his sense for effect both with pianoforte and orchestra was very keen. Though the intellectual processes of concentrated development were not much in his line, the piquant novelty of his diction gained also for his violin sonatas and for his pianoforte concerto a wide popularity.

Bohemian music is represented by Antonin Dvořák,

who was born in 1841 at Mühlhausen, Bohemia, where his father was butcher and innkeeper. He played in town bands, and in the National Theater at Prague, and did not come into public notice as a composer till comparatively late. But when once started, about 1877, his progress to world-wide fame was very rapid. He is to be credited with several admirable symphonies, and a great deal of fine and interesting chamber music. He is generally at his best in the national style, which is his true sphere, and in the expression of such romantic folk-stories as "The Specter's Bride," and in the superb sets of "Slavische Tänze." He is one of the greatest recent masters of orchestration; and though in mastery of design and consistency of style he is a little uncertain, the profusion and freshness of his ideas place him very high among the composers of his time. He died in 1904.

Of composers who have done honorable and skillful work in the instrumental lines there are in modern times too many even to catalogue. The above have so far made most mark upon history, and can only be supplemented by reference to names of such high distinction as Niels Gade, the Dane; Max Bruch, an admirable master of choral as well as instrumental effect, and the writer of justly popular violin concertos; Karl Reinecke, a prolific and successful composer; Felix Draeseke, a composer gifted with highly original and romantic ideas; Xaver Scharwenka, a very successful composer of artistic pianoforte music; Johann S. Svendsen, the Norwegian composer of overtures, symphonies, and chamber music; the admirable organist and writer of organ and chamber music, Joseph Rheinberger; the popular composer of brilliant piano-

forte music, Moritz Moszkovski; the highly gifted but unfortunately short-lived Hermann Goetz; the Polish born Jean Louis Nicodé, a very highly gifted composer of instrumental music of various kinds; and the British born Eugen d'Albert, one of the finest pianists of the age, and possessed of very high gifts as a composer.

In France, purely instrumental music has been less cultivated, but a few of her composers have written some effective music, mostly of a light and unclassical character; among others, Delibes, who wrote such charming ballet music as the "Coppélia" and "Sylvia"; Lalo, who wrote chamber music, and very effective violin concertos, as well as orchestral music; Saint-Saëns, who attacked classical forms of art in an unusually serious mood for a Frenchman. Italy is mainly represented by Sgambati, a pupil of Liszt, and the composer of much effective chamber music and other instrumental music, including two symphonies. The natural field for English composers seems to be choral music, but instrumental music has also thriven remarkably well of late in the hands of such composers as Mackenzie, Stanford, Cowen, Cliffe, and several younger composers, some of whose works are well entitled to serious consideration and study.

CHAPTER XXVI

MODERN OPERA

Opera in Italy since Gluck's Time—Rossini—Opera in France —Meyerbeer—Gounod—Other Recent French Representatives—Germany—Continued Aspirations for National Opera—"Fidelic"—Spohr — Weber — "Der Freischütz" — Weber's Position and Influence—Wagner—Early Influences—Maturity First Attained in "Der Ring des Nibelungen."

THE composers of Italian opera after Gluck's time, unaffected by his exhortations to reform, continued to concentrate their efforts on pleasing their audiences. In this direction they succeeded extremely well. The most conspicuous proof of the fact was the career of Gioachino Antonio Rossini (1792-1868). He won his first great success in opera seria with "Tancredi" in 1813. The music, though often borrowed from familiar sources, exactly hit the taste of typical opera audiences, and from that time what is known as the Rossini fever began, and spread by degrees over the greater part of Europe. Several buffa operas followed "Tancredi," and he had one or two checks before he arrived at the full measure of his popularity. "L'Italiana in Algeri," produced in Venice in the same year as "Tancredi," was a success, "Aureliano" was a failure, so was "Torvaldo e Dorlinska," and so at first was the famous "Barbiere" (1816).

But this last failure was merely owing to the fact that the Romans, for whom it was written, were much attached to a setting by Paisiello, and regarded it as an impertinence of the young composer to use the same subject. In the end the superior verve and tunefulness of Rossini's work won its way, and it still holds a prominent place in the class of opera buffa.

His next important opera seria was "Otello," which came out at Naples in 1816, and the rest of his most successful works in the purely Italian style consisted of the opera buffa "Cenerentola" (Rome, 1817), "Gazza Ladra" (Milan, 1817), "Mosè in Egitto," a sort of dramatic oratorio (Naples, Lent, 1818), "Ricciardo" (Naples, 1819), "Ermione" (1819), "Donna del Lago" (Naples, 1819), "Bianca e Faliero" (Milan, 1819), "Maometto Secondo" (Naples, 1820), "Zelmira" (Naples, 1820), "Semiramide" (Venice, 1823).

The facilities for producing operas in Naples were brought to an end in 1820 by an insurrection which got rid of the King, and at the same time reduced the resources of the famous opera manager Barbaja, who had hitherto combined the operatic business with the farming of gambling houses. Rossini, therefore, was induced to go to Vienna, and "Zelmira" was written with more care than usual, with a view to performance there. In 1823 he went to London, under contract with the manager of the King's Theater, Benelli, to produce a new opera. He was extravagantly fêted, and made a large sum of money by playing the accompaniments for singers at fashionable parties for £50 a night; but the opera manager failed, and his new opera was never completed.

He then went to Paris, where all the world again fell

at his feet; and fortunately the Parisian traditions of French opera, which had always kept the dramatic elements well in sight, influenced him very happily. He began his career there with old works refurbished, some of them with new names. "Maometto" appeared again as "Le Siège de Corinthe," and "Mosè in Egitto" was revised as "Moïse." His most important work, "Guillaume Tell," with libretto by Scribe, was produced at the Académie in 1829, and it was his last. The superior type of audience he addressed in Paris made him more careful, and the result showed how great his powers were in all directions, in respect of orchestration as well as mere vocal effect. Even the style is more genuine and sincere than in his earlier productions. But he went no farther. It may have been his notorious indolence of disposition or jealousy of Meyerbeer.

It is greatly to his honor that Rossini appreciated Mozart and Haydn. His ardor for their music in his youth caused him to be called "il Tedeschino"—the little German. Their influence upon his work is conspicuous in all its better aspects and also in his use of their melodic phrases. He was much better and more artistic in his orchestration than other Italians, and was distinctly inventive in the matter of effect. He deserves credit for trying to improve the treatment of the ordinary parts of the dialogue, and for making the recitative musically a part of the work, as Mozart had often done. Whatever his shortcomings, he towered over most of his compatriots in the following generation both in ability and artistic sincerity.

His contemporary, Mercadante (born 1797), was very popular in Italy. He was educated at Naples,

and wrote both buffa and serious operas, such as "Elisa e Claudio" (1822), "Il Giuramento" (1837). He died blind in 1870. Donizetti (1797-1848), following Rossini's lines without his higher gifts, had great success with "Anna Bolena" (1830), "L'Elisir d'Amore" (1832), "Lucrezia Borgia" (1834), "Lucia di Lammermoor" (1835), "Favorita" and "Fille du régiment" (Paris, 1840), "Don Pasquale" (Paris, 1843). He was educated at the Conservatorio at Naples, and paid much attention to solo singing of the tuneful order, and was consequently very popular with opera singers as well as their audiences; and he had the advantage of being interpreted in his time by the finest singers in the world, such as Grisi, Rubini, Tamburini, Lablache, and Mario.

Bellini, born at Catania in Sicily (1802), was also educated at Naples, and learned early to concentrate his attention upon the requirements of solo singers; and they were consequently much at his service. The first of his operas to make any mark was "Il Pirata" (1827), which was written under the actual supervision of the famous tenor Rubini, who sang in it with immense success. "Sonnambula" came out in 1831, at the Scala in Milan; "Norma" in 1832, "Puritani" in 1835. He died in the latter year.

Giuseppe Verdi was born in 1813, at Roncole, where his father was an innkeeper. He had very slender opportunities to cultivate music till his eighteenth year, when he went to Milan and studied energetically for a time and learned to appreciate Mozart's music. His first public appearance as an opera composer was with "Oberto" (1839). "Proscritto" followed in 1844, and was better known later under the name of "Ernani"—

the name of the famous play by Victor Hugo. His fame grew by degrees and he took an important position as an opera composer of better stamp than the immediately preceding Italian composers, with "Rigoletto"—founded on Victor Hugo's impressive play "Le roi s'amuse"—in 1851. "Trovatore" and "La Traviata" followed in 1853, "Les Vêpres Siciliennes" (1855), "Ballo in Maschera" (Rome, 1857), "Don Carlos" (Paris, 1867). These were mainly of the class popular with fashionable opera audiences, though they contain much skillful work, such as the famous quartet in "Rigoletto," where the characters are kept very clearly distinct. The influence of the sincerer type of German art began to tell upon him as time went on, and its effect is shown in "Aïda," written for the Viceroy of Egypt for performance at Cairo, in 1871. The same influence, and that of his friend Boito, are even more apparent in his "Otello," which is eminently dramatic, and shows his great powers in all branches of musical effect alike, especially in dramatic expression. His "Falstaff," which came out in February, 1893, exhibits the same characteristics. He died in 1901.

In France, in recent times, the fruits of the national instinct for the stage have been most happily shown in operatic comedies and light comic operas. These branches of opera originated from the Italian opera buffa which made its appearance in Paris a little before Gluck's time. The French composers imitated and improved upon it. Their natural wit, sense of finish and neatness, and lightness of skillful handling, all found a most suitable province for exercise, and the result in the hands of the later composers is singularly artistic and good of its kind.

One of the most successful of the early representatives of this kind of art was Boieldieu, born at Rouen in 1775. He began his career in Paris in 1797, with the opera "La famille suisse." Among his chief successes was "Le Calife de Bagdad," which came out in 1800. The most famous of all was "La dame blanche" (1825), which has had the most pronounced success of any opera of its kind. The thousandth performance was celebrated in 1862. It appears to be still alive in France at the present day. Boieldieu himself lived only till 1834.

Auber, whose successes are of a wider scope, and whose artistic powers were of a much higher order, was born at Caen in 1782. He began as an amateur, and was for a time a clerk in an office in London. He began composing little operas for Parisian theaters in 1811. Associated with the brilliant librettist Scribe, he came more into prominence with "Leicester" (1822), "Le Maçon" (1825), "Fra Diavolo" (1830), and "Les diamants de la couronne" (1841). The greater part of his work belongs to this light class of French opera comique, of which it is most brilliantly representative. His one serious opera, "Masaniello," or "La Muette de Portici," also had very conspicuous success. It came out in 1828, and made a great impression on quite different grounds from his lighter works; as he proved himself to have great dramatic powers, and used his orchestral forces for such purposes well. The opera had the singular honor of precipitating a popular revolution in Brussels, in 1830. Auber lived till after the German siege of Paris. The horrors of the Commune are reported to have hastened his end, and he died in 1871.

Another more short-lived composer of this light kind of opera was Hérold, born in Paris in 1791. He wrote much popular music for the pianoforte, and ballet music, and many operas, solid as well as light. The most famous were "Zampa" (1831) and "Le pré aux clercs" (1832). He died in 1833 of consumption. Halévy, whose original name was Levi, was born in 1799. He also wrote various operas of diverse calibers. The best of his grand operas were "La Juive" (1835) and "La reine de Chypre" (1841). They both show considerable sense of effect and skill of orchestration. Among his comic operas, "L'Eclair" (1835) was notable. He was also remarkably successful in ballet music. He died of consumption, like Hérold, in 1862.

The impulse toward scenic display, which was always liable to become prominent in French opera, even in Lulli's time, and is peculiarly noticeable in the works of Spontini and Halévy, came to a head in the works of Meyerbeer, the son of a German banker in Berlin, where he was born in 1791. He was extraordinarily clever in many ways, for in early years he was chiefly famous for his brilliant abilities as a pianist and for his remarkable gift for reading from score. He began his career as an opera composer with some German operas, which were not successful. After that he went to Italy and produced a great number of operas in a regular Italian style (much to his friend Weber's regret), and won considerable success. He also tried a combination of Italian and German styles in "Il Crociato in Egitto" (The Crusader in Egypt), which came out in 1826 in Paris.

His coming into contact with Parisian tastes turned

his views in a new direction. The susceptibilities of the French to imposing spectacular display possibly indicated to him that they would be just the audience for gifts of his order. He studied French character and history carefully, and, with the congenial assistance of the librettist Scribe, made his first venture in the new line with "Robert le Diable," in 1831. He had calculated so well that the result gave him at once a commanding European reputation. He was very cautious and slow in maturing his work, calculating and testing his effects with infinite patience, and his successive operas therefore came far apart. "Les Huguenots" was produced in 1836, "Le Prophète" in 1849, having been finished as early as 1843 but kept back; "L'Etoile du Nord" came out in 1854, "Dinorah" in 1859. "L'Africaine" was kept by him for over twenty years, as he never could finally satisfy himself that he had got it all sufficiently up to his idea of effect. It was not performed till 1865, the year following that of his death.

Meyerbeer tried many styles and won popular favor in more than one, but it is as a representative of French grand opera that he is specially known to fame. He had great sense of theatrical effect without much real dramatic power. His operatic work dazzles and astonishes the senses, but does not appeal to deeper feelings or express any noble emotion. He carried the French taste for display to a climax and surpassed every one who preceded him in supplying fit music for crowded scenes and pompous spectacles. He wielded great resources with remarkable success, and used all the old conventions of arias, flourishes, and set movements without scruple.

Of very different caliber was Gounod (1818-93). His genuine sensibility is conspicuous, and his feeling for beauty of orchestral color, and even for genuine choral effect is remarkable. He studied at the Conservatoire in Paris under Halévy. Going to Rome in 1839 he became enamored of the old ecclesiastical style for a time. Then he fell in love with German music and with Berlioz, who exercised a permanent influence upon him. He won great and eminently deserved success in both kinds of opera. His lighter operas are worthy of association with the best types of this admirable branch of French art; and his great success in grand opera with "Faust," for which he had to wait so long, is too familiar to need comment. In this last the wholesome influence of German romanticism is clearly displayed, and his efforts in the direction of genuine expression are as conspicuous in his best works as they are conspicuously absent from Meyerbeer's productions. "Sapho" was his first opera (1851), and the most important of those which succeeded it are "La nonne sanglante" (1854), "Le médecin malgré lui" (1858), "Faust" (1859), "Philémon et Baucis" (1860), "La reine de Saba" (1862), "Mireille" (1864), "Roméo et Juliette" (1867), "Polyeucte" (1878).

Among the many successful representatives of modern French opera of various kinds, the following also deserve honorable recognition. Lalo (1823-92), whose comprehensive powers have been referred to above in connection with instrumental music, has also produced considerable impression with his "Roi d'Ys." Delibes (1836-91), whose brilliant gifts were most effectually shown in ballet music, was also very successful in the

line of opera, especially in "Le roi l'a dit" (1873) and "Lakmé" (1883). Bizet (1838-75), whose characteristic and dramatic "Carmen" has given him such world-wide fame, was born in Paris, studied at the Conservatoire, and wrote several operas which were not very successful till "Carmen," which was his last, and came out in the year of his death. The remarkable instinct for effect possessed by Massenet (born 1842) has brought him into considerable prominence as a representative of modern French tendencies. His most celebrated operas are "Don César de Bazan" (1872), "Le roi de Lahore" (1877), the semi-religious opera "Hérodiade" (1881), "Manon" (1884), "Le Cid" (1885). A composer who has attracted attention is A. E. Chabrier (1842-93), who produced several operas, such as "Gwendoline" (1886) and "Le roi malgré lui" (1887). Ambroise Thomas (1811-96) was a most prolific composer of operas; and won conspicuous success with "Mignon" (1866) and "Hamlet" (1868). He succeeded Auber as director of the famous Conservatoire in 1871. Among the most recent composers of French opera André Messager (born 1853) is a happy representative. His "Basoche" is a very refined, artistic, and genial example of its class.

While France and Italy were already busy producing numbers of operas of all kinds, the Germans were still looking for the type of opera which should adequately represent the high standard of their taste and musical intelligence. After "Zauberflöte" a considerable time elapsed without any noticeable achievement, till Beethoven had at last found a subject which satisfied his scrupulous taste, and brought out "Fidelio" in 1805. In the interim since the "Zauberflöte" a good

deal of progress had been made in orchestral art and in the development of the resources of expression. Beethoven himself had written his first three symphonies and a large number of sonatas, and the whole development of his first period lay behind him, so that "Fidelio" represents a very much more modern type of expression than Mozart's work. The treatment of the orchestra is much more rich and copious in variety, and the quality of the melody much less formal.

As might be expected, the scenes which are best, musically, are those in which there is a great deal of real human feeling, as in the prison scene. In parts like the duet between Marcellina and Jacquino, and in Rocco's song, the traces of the old traditional operatic style are more apparent. As a whole the standard is too high for average operatic audiences, and this, joined with the fact that when the opera was first brought out in Vienna in November, 1805, the Austrians had just suffered serious reverses at the hands of the French, who were even in occupation of the city, caused the opera to be but a moderate success. After three performances it was laid aside till May, 1806, and then again till 1814, when it was produced in a considerably revised state. It won its way slowly in Europe, but has never had any popular success, though to intelligent musicians it represents the highest standard of noble art that has ever been put into an opera. "Fidelio," however, did not finally solve the problem of national opera, for though written to German words and of the lofty type consistent with the dignified attitude of Germans toward music, the subject is not German, and the music still has touches of the earlier manner, and is not distinctly Teutonic throughout.

Neither did Spohr, with the most excellent purposes, completely satisfy German aspirations, as his dramatic sense was much too limited. He had good opportunities for studying operatic requirements, as he had great experience of orchestral music, and was appointed conductor of the Vienna Opera House for a time in 1812. But his strong impulse toward music of the classical type, like sonatas and concertos, prevented his hitting the right vein in operas. The first which he brought to successful performance was "Der Zweikampf mit der Geliebten," or "The Lovers' Duel," which came out at Hamburg in 1810. The most notable of those which succeeded were "Faust" (completed 1813, performed at Prague under Weber in 1816), "Zemire und Azor" (1819), and "Jessonda" (1823). The latter was far the most successful of all, and indeed was highly appreciated in Germany for the excellent use of artistic resources and the generally pleasant texture of the whole. He wrote several more, but none of them are of any real dramatic importance.

The composer with whom the solution of the problem of national Teutonic opera is always associated is Weber. The circumstances of his early years were not very promising, but his father's aspiration to have a prodigy producing operas in childhood, at least afforded him early experience of theatrical work. The son was drilled with the view of pushing him rapidly forward by Vogler, and produced his first opera, "The Dumb Girl of the Forest," at the age of fourteen. After that he was made a secretary at the court of the King of Würtemberg at Stuttgart, and when that part of his career was unexpectedly and abruptly closed, he resumed the occupation of music and went for

concert tours round Germany as a pianist, his gifts in that line being very remarkable. He was first prominently touched by the national spirit when aspirations for independence seized on the Germans after Napoleon's conspicuous failure in the expedition to Moscow. Weber's own enthusiasm was expressed in his splendid national songs and part songs to Körner's words, in the sets of the "Leyer und Schwert," which went the length of the land.

He was further identified with the national spirit through being appointed to organize a really German opera, first at Prague in 1813 and then at Dresden in the following year, where hitherto Italian opera had had a monopoly. And, finally, his Teutonic impulse found its full expression in the opera "Der Freischütz," which came out in Berlin in 1821. This, at last, was German work through and through. The style is the style of "Volkslieder" expanded so as to meet the requirements of the situation. The traces of Italian traditions have at last evaporated, and all is genuinely Teutonic, in subject and treatment alike. Moreover, the treatment is of the highest artistic quality. The orchestration was the finest and the most perfectly adapted for such purposes hitherto seen; the musical characterization of the various actors in the drama is singularly clear and happy; and the expression is of that warm and sincere kind which essentially distinguishes the German style from that of all other nations. The dialogue is still spoken, as was traditional in the earlier German forms, such as the "Singspiel"; but the continuous texture of the ultimate type of Wagner is prefigured in many parts of the work.

In Weber's next important opera, "Euryanthe," which came out in Vienna in 1823, the dialogue was set as well as the more important parts of the work, and in some respects it rises to higher levels than "Der Freischütz." But the libretto itself is so foolish that it has prevented its having general success.

Weber's last opera, "Oberon," was written by invitation for England. It is a fairy play, and not much more fortunate in respect of the libretto than "Euryanthe." Weber went over to England to launch it. He was already in a broken state of health. He lived to see the first few successful performances, in April, 1826, and had just made up his mind to return to his family in Germany on June 6, when, on the morning of June 5, he was found dead in his bed in Sir George Smart's house. Wagner only expressed the general feeling when in the year 1844, on the removal of Weber's body to Germany for reburial in Dresden, he described him as the most German of composers. The vices and virtues of his manner are alike German. His style is saturated with the Teutonic spirit. Even the vagueness and irregularity of his form in instrumental music come from his aspiration after expression, which from the first had been the conspicuous aim of Germans.

His style had much effect upon German composers generally, even outside operatic work, as, for instance, on Mendelssohn. Marschner (1796-1861) was also much influenced by him, and most naturally so, as he was associated with him for some time in the opera work at Dresden. He produced several very successful operas, all rather in Weber's style, and some of them on the same supernatural lines which Weber

liked. Among the best were "Der Vampyr" (1828), which had a great success, and even a long run in England; another was "Der Templer und die Jüdin," founded on Walter Scott's "Ivanhoe." His last was "Hans Heiling" (1833), regarded as his masterpiece.

Schubert also wrote some operas, but none of them ever took any hold of the theater. His instinct was too essentially lyrical, and his susceptibilities too delicate for theatrical work. Schumann also made his effort in "Genoveva" (1850, Leipzig), which contains superb music, but does not apparently hit the standard of the stage; which, considering Schumann's introspective disposition, is not surprising.

Other German composers who did successful work for the stage are Kreutzer (1782-1849), who wrote "Das Nachtlager in Granada"; Lindpaintner (1791-1856), a good conductor, who wrote a great many solid operas; Lortzing (1803-52), a composer of good light comic operas, such as "Czar und Zimmermann" (1837), "Wildschütz" (1842), "Undine" (1845), and many others; Nicolai (1810-49), who wrote the admirably artistic and effective opera "Die lustigen Weiber von Windsor"; and Peter Cornelius (1824-74), who identified himself with the "new German" movement of the days when Liszt was at Weimar, when Wagner's career was but beginning, and produced "Der Barbier von Bagdad," which was brought out by Liszt in 1859.

The composer on whom the influence of Weber and Beethoven was exerted with most important results was Richard Wagner. This greatest representative of music-drama was born at Leipzig in 1813. His father died when he was but a few months old, and

his mother was soon married again to an actor named Ludwig Geyer; so he was surrounded by theatrical influences from his childhood. He early showed a passion for things dramatic, such as Greek plays and Shakespeare, and attempted to write plays of very tragic cast himself. He heard Weber's works in Dresden and learned to worship them and Beethoven's symphonies. He began his actual career in 1833 as a chorus-master at a theater in Würzburg, where an elder brother was engaged as an actor. After this he was successively conductor at the theaters of Magdeburg, Königsberg, and Riga.

In these early years he wrote several operas in different styles, none of which were successful; and finally determined to try his fortune at the Paris Opera House, which was then regarded as the center of the operatic world. As Meyerbeer's influence was paramount there he wrote his first grand opera, "Rienzi," very much in Meyerbeer's manner, with every kind of resource he could think of which ministered to spectacular and sensational effect. But, unfortunately, though he got an introduction from Meyerbeer to the director of the opera house, he never succeeded n getting a hearing for it. The only work of his which was heard by the Parisians was the libretto for his opera "The Flying Dutchman," which the opera-manager took and gave to one of his band to set, and then performed that setting, but not Wagner's. After waiting for a long while, and enduring many privations and disappointments, Wagner had to give up all hope of a hearing in Paris.

Ultimately "Rienzi" was accepted at Dresden and performed there in 1842, and met with success; and

it was followed after a little while by his appointment as conductor there. His own setting of "The Flying Dutchman" then obtained a hearing, but did not meet with so much success as "Rienzi." The latter had been more in the style people were accustomed to, and the pomp and display dazzled them, while "The Flying Dutchman" was more of the real Wagner, extremely dramatic, and unlike the familiar operas of either Italian or French pattern, and people were too much puzzled by it to enjoy it. In the end its great dramatic power, and the genuine interest of the story, as well as the very striking and characteristic music, have won it a firm position, and it is recognized as the first of Wagner's works which approximately represents him. Wagner realized the advantage of using traditional stories and national legends as the basis of his works, since they necessarily represent things out of the range of common everyday experience, and are free from the hackneyed associations which make the singing of dialogue (except in comic scenes) seem ridiculous.

He also realized that it was an advantage to choose subjects which were of special Teutonic interest—and the next he undertook after "The Flying Dutchman" was "Tannhäuser," the story of the Hill of Venus; he completed it by 1844 and brought it out in the next year. Being still more uncompromising than the previous opera, it was not received with favor; to his great surprise, since he himself did not realize that his methods would be so unintelligible to minds accustomed to conventional things. However, he was not the man to go back or write at a lower level to please a public, and went on with "Lohengrin"

and completed it in 1846. Unfortunately, in 1849 he was implicated in certain revolutionary proceedings in Dresden, and had to escape to avoid imprisonment. He fled to Liszt at Weimar first and thence to Paris. This episode caused him to lose his appointment at Dresden, and he had to remain in exile from Germany for many years. Liszt meanwhile, with the ardor which characterized him, was bringing out all sorts of operas of special interest at Weimar, and among them produced "Tannhäuser," soon after Wagner's flight, and then "Lohengrin" for the first time, also in 1850. Wagner himself never heard the latter till many years later.

During his exile Wagner mainly lived at Zurich in Switzerland. He occupied himself with much literary work, which caused him to consider the possibilities of the music-drama more carefully. He also took up the earliest forms of the myths of the Nibelungs and the gods of Walhalla, and the national hero Siegfried, which are embodied in Norse as well as ancient Teutonic legends; and finding them too rich in materials for one opera, he resolved on developing them into a great cycle of music-dramas, like the ancient trilogies of the Greeks. The first, which is a sort of preface to the series, is "Das Rheingold," which was completed in 1854. "Die Walküre" followed in 1856, "Siegfried" was not completed till 1869, and "Götterdämmerung" (Twilight of the Gods) was only brought to perfection in 1874. This series forms the group comprised under the general name "Der Ring des Nibelungen" (The Ring of the Nibelungs).

His work upon the great cycle was frequently interrupted. While he was still at work on "Die Walküre"

he received an invitation to conduct at the Philharmonic concerts in London for the season of 1855. His reputation was at this time a very curious one; so few people understood his music that his determination to be true to himself and act according to his convictions appeared like a sort of lunacy of conceit, and his energy to be the mere self-assertion of a charlatan. It was impossible for his visit to that country to be anything but a mockery. He tried to insist upon some necessary reforms in the arrangements, and gave his full energies to making the performances as good as possible; but, of course, he was not invited again.

A more serious interruption followed. It dawned upon him while he was in the middle of "Siegfried" that it was already a long time since he had brought anything new before the public, and that it might be unwise to let the ten or twelve years pass before the whole of the "Ring" could be completed without showing any sign of continued activity. So he set to work on "Tristan und Isolde" and completed it before going farther with the "Ring." The poem was finished in 1857, and he worked on steadily till the whole was complete in 1859. After its completion he resolved to make a new assault upon Paris to try and get his works heard. He gave concerts there with excerpts from various works, and finally, through some influence at court, got "Tannhäuser" ordered for performance. Immense sums were spent on the preparation, and after 150 rehearsals it was received with a pandemonium of uproarious opposition got up by a Parisian clique, which prevented its even being audible.

A turn of better fortune followed. He received permission to return to Germany, and about this time

he took in hand the composition of the delightfully genial "Meistersinger von Nürnberg." But things had gone so hardly with him that he was on the verge of throwing up the struggle for good. Just at the right moment came a message from the young King of Bavaria, offering him a small but sufficient pension and a home in his dominions where he could work in peace. This was followed by more reassuring events. "Tristan" was performed at Munich in 1865 and "Die Meistersinger" in 1868. In 1872 he settled in Bayreuth, and the foundation of the great theater was laid. He again took up the composition of the great trilogy, and when the whole thing was complete and the theater finished it was performed for the first time in 1876. About that time he completed the poem of "Parsifal," and went on with the composition shortly afterward, and finished this last of his great music-dramas in 1882. The first performances took place at Bayreuth in the same year. He did not long survive them, for his death occurred in Venice in 1883.

Wagner's impulse was at first mainly dramatic. His musical powers grew as his career proceeded and they scarcely arrived at maturity till the beginning of the "Ring." His great advantage lay in his control of all the factors of operatic art—as he attained a high degree of mastery of dramatic, theatrical, and musical effect, and in his hands each served to enhance the effect of the others. His reforms consisted mainly in getting rid of the old formulas, such as arias, recitatives, finales, and all the set movements which disturbed and hindered the action; and in thus making each act continuous music throughout. He developed the principle of the *Leitmotiv* to the fullest extent, giv-

ing a definite musical figure to each character and situation; and using the figures all through the orchestral part of the work, instead of the old formulas of accompaniment. He enlarged the bounds of tonality so as to give himself as much room as possible for expression, and developed the resources of effect in the orchestra to the utmost. His treatment of the voice was the natural outcome of modern musical development. He reserved the finer melodic phrases for the occasions when much expression was required, and treated the rest like the old declamatory recitative, but with richer accompaniment.

CHAPTER XXVII

MODERN VOCAL MUSIC

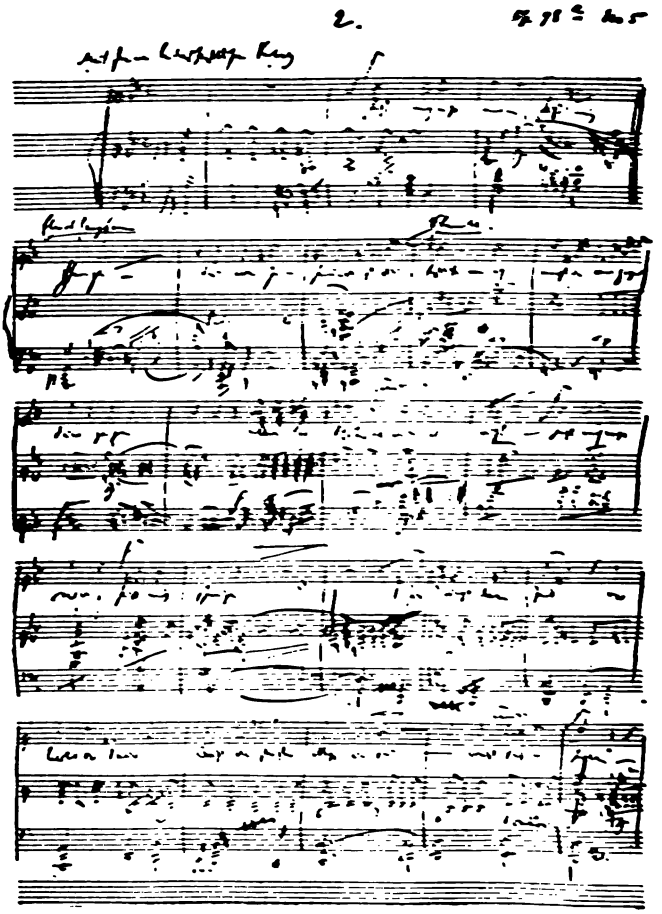
Solo Song—Characteristic of the Modern Phase of Music—Schubert—Schumann—Brahms—Solo Song in France—In England—Revival of Oratorio—Haydn—Spohr—Lesser Lights—Mendelssohn—Thriving State of Choral Music in Combination with Orchestra.

NO branch of modern music is more characteristic or more illustrative of prevailing tendencies than the solo song, for none illustrates more clearly the relation between music and the thought expressed, or the aim of the musician to be guided by the idea rather than the conventions of classical form. The typical modern song has only become possible through the long development of the resources of art, and only through long experience and innumerable experiments have men learned what to do and what not to do in dealing with a poet's language. Songs existed from the beginning of musical time; but until the beginning of the nineteenth century they consisted either of regular definite tunes which had to be fitted to all the verses, whatever change of sentiment or accent occurred, or of crude elocutionary experiments like the settings of lyrics made by the composers of the Restoration period in England.

Many tendencies combined to bring about the close wedding of music to word and sentiment, which began

to be adopted at the beginning of the century. Gluck's theories had some influence, for they caused people to pay more attention to the meaning of the words and the declamation. The development of instrumental resources and of pianoforte technique put fresh powers in the hands of composers. Mozart and Haydn both approached to the ideal of modern song here and there, and Beethoven in several cases actually attained it. Weber, through his intense sympathy with the Teutonic Volkslied, likewise produced both in his operas and in separate songs perfect examples of the true modern song; but the first composer whose personality was specially expressed in this branch of art was Franz Schubert, and he consequently stands out as the first representative song-composer of modern times.

Schubert was one of the most spontaneous and one of the least systematically educated of musicians; and his musical nature was particularly open to follow external impressions. Knowing very little of any theory of form, he was particularly amenable to the guidance of a poet, and he seems to have written his songs under the immediate impulse which the poems he read produced in him. There was hardly any development of his powers in this respect, for some of his very finest songs were written in early years. "Gretchen am Spinnrade" was written when he was but seventeen (1814) and "The Erlking" when he was eighteen (1815). "Schwager Kronos" and "The Wanderer" followed soon after. Throughout the whole of his life he poured out song after song, and it was more the chance of a poem coming in his way than any other consideration which led to a composition. The beautiful set of twenty called "Die schöne Müllerin" belongs



A MASTER'S MANUSCRIPT

Schumann's Autograph of Mignon's Song, "Heiss' mich nicht reden," from "Lieder u. Gesänge aus Goethes 'Wilhelm Meister'."

to the year 1823, "Die junge Nonne" to 1825, "Sylvia" to 1826, "Die Winterreise" to 1827, and "Liebesbotschaft" and "Der Doppelgänger" to the last year of his life, 1828. In all he wrote over 600, many of them long, rich, and deeply expressive works.

Scientific writers on music are fond of classifying songs into certain categories in accordance with the nature of the musical treatment. Schubert, of course, had no idea of such classification. The poems suggested to his mind the method of treatment. If the words were simple, he was satisfied to write a tune with a simple accompaniment and repeat the same for different verses; if the words were subtle and intricate in meaning, he adopted a more subtly artistic way of dealing with the musical material; if he had to tell a dramatic story he made the voice part declamatory and put the illustrative effects into the pianoforte part. It is rare that the special methods indicated by the scientific analysts persist through a song. Even the simplest have neat turns of artistic finish and subtleties of suggestion in detail, the most richly organized often have passages of vocal tune, and in the ballad-like songs every means is used to convey the musical counterpart of the words. He uses realism, color, striking harmony, polyphony, modulation, as well as melody to bring home the poet's meaning. Melody is relegated to its right place as only one of the factors of effect, and a great deal of his expression is produced by striking harmony and modulation.

Under such conditions the old idea of song has become almost obsolete and the word "accompaniment" a misnomer. The modern type of song is a complete work of art of a much more highly organized char-

acter than the old type. Harmony is an immensely more powerful means of expression than melody, and in bringing it to bear as a factor in the art-form the pianoforte necessarily occupies a far more important place than it used to do. It is through the treatment of what is technically called the accompaniment that the effects of harmony, modulation, and the rest become possible, and the resources of the composer for intensifying the poet's meaning and faithfully following his artistic intentions are immensely enhanced.

Schubert's songs were very slow in winning popular acceptance. Their very perfections were regarded as utter extravagance at first, but at the present day the best examples are regarded as the complete solution of the problem of song and are the prototypes of all modern products of the kind.

It is not necessary to discuss the songs of distinguished composers who are not particularly identified with the department of song. Spohr and Mendelssohn wrote some pleasant songs, but they were not by nature song-writers, and the same may be said of a large majority of able and conscientious composers who have shown themselves successful in other lines.

Of genuine song-writers since Schubert, Schumann is one of the foremost. His literary tastes and his poetical views on art were in his favor. He did not begin writing songs till after he had written a considerable portion of his best pianoforte music. In 1840, the year of his marriage, he suddenly threw himself with ardor into song-writing, and in one year produced over a hundred, comprising nearly all the best he composed. Schumann, like Schubert, adapted his methods to the poems he set. He was less happy than

Schubert in the descriptive line, but he touched a deeper vein of emotion and reached a higher pitch of warmth in color and expression. He is most notable for his faithfulness to the poet's declamation, and the intense sympathy with which he follows every turn of thought and feeling.

Among composers whose fame is mainly centered in song-writing is Robert Franz, who was born in 1815 at Halle. Without the warmth or verve of the two greater composers, he won the affection of his fellow-countrymen by the faithful care and insight with which he followed the poet's meaning and diction—fitting his music close to every word. He died in 1892.

One of the greatest of song-writers was Johannes Brahms. A set of his early songs was among the things which first attracted the attention of Schumann, and throughout his life he was constantly pouring out songs of an infinite variety of style and form and caliber. In no department is he more thoroughly great. He is completely in touch with his poet, and applies his immense artistic resources to the ends of expression without a trace of superfluous artifice or pedantry. In later years he simplified his methods of treatment considerably. The finest songs belong to his early days and middle age, but out of many volumes of songs there are very few that have not decided point and genuine merit of the true song order.

The feeling for song-writing increases as music becomes more elastic and free in its adaptability to varieties of expression, and the number of genuine song-writers has of late become very large indeed. Among the most remarkable is Hugo Brückler (1845-71), whose settings of the songs in Scheffel's "Trompeter

von Säkkingen" are of a very high order. The Norwegian, Halfdan Kjerulf (1815-68), has won a wide and well-deserved popularity for refined expression and well-varied songs. Rubinstein showed a very exceptional gift for song-writing, and produced some of the best examples of modern times; and Taubert, Lassen, Grieg, Dvořák, Jensen, and Henschel have all contributed their share.

The French conception of song is much more superficial than the German, and concentrates much more attention on the voice part. But they have an admirable literature of modern lyrics, and the foremost composers of the country have supplied the world with a vast collection of refined and pleasant settings of them. Berlioz stands at the head of these French song-composers with very characteristic examples, some of which are speculatively treated, and interesting on that account, as being out of the common line. Of modern composers Gounod was specially successful in England as well as in France, and not far behind come F. David, Massenet, Godard, and Widor.

In England song-writing reached, in the past generation, a pitch of degradation which is probably without parallel in all musical history. Mercantile considerations and the shallowness of average drawing-room taste produced a luxuriant crop of specimens of imbecility in which the sickly sentiment was not less conspicuous than the total ignorance of the most elementary principles of grammar and artistic construction, and of the relation of musical accent to poetical declamation. In those days the songs of Hatton (1809-86), and of Sterndale Bennett, and the early songs of Sullivan and those of F. Clay (1840-89), were honorably

conspicuous for real artistic quality and genuine song-impulse. Though there are a good many representatives of the old school still active, the present day is represented by mature masters of their craft who can write genuine songs; such as Mackenzie, Stanford, Cowen, and Maude Valérie White, also a few younger composers, such as MacCunn and Somervell, who produce songs as genuine and as beautiful as are to be found anywhere in Europe. The impulse is certainly going in the right direction, and if the public can be persuaded not to insist so exclusively upon songs being either vulgar or trivial and vapid, the future of English song will undoubtedly be such as the nation may be proud of. (The development of music in America is fully treated in a succeeding section.)

A branch of art which is most characteristically modern, and seems to have a great deal of life in it, is the combination of orchestra with choral music and solos, independent of the stage, such as is familiar in modern oratorios, cantatas, odes, and so forth. The collapse of oratorio after the time of Handel and Bach was mainly owing to the spread of Italian operatic taste, which had moved rapidly away from choral music as soon as the Neapolitan school of composers gained hold of the world, and cared for nothing but solo-singing of the formal aria type. The influence of the prima donna was even more pernicious in the line of oratorio than in opera, for chorus is truly an essential of the latter form; and when chorus was reduced to the minimum possible, that form of art collapsed. Indeed, the Italian influence was fatal to serious and sacred music all round, and it was only in Protestant countries that the traditions of grand oratorio lingered

on, and it was in Protestant countries that the resuscitation was achieved.

A sort of forlorn hope in this period is the work of Karl Philipp Emanuel Bach in that line. His two oratorios, "The Israelites in the Desert" (1775) and "The Resurrection" (1787), are both very interesting, and contain passages of great beauty and vivid expression. It is noteworthy that they foreshadow the very lines on which the resuscitation was cast, as there is an unusual amount of orchestral work in them, some of it very happily conceived.

It was, indeed, the development of orchestration, and the splendid opportunities which the combination of orchestra and chorus affords to composers, which led to the revival. In old days the instrumental accompaniment was purely secondary and subservient. The development of orchestral style and effect doubled the resources of composers in works of this class, and supplied them with a very interesting problem to solve. Mozart was in the forefront of the new development with his "Requiem," which is the most earnest and sincere of all his works. It was not finished at his death in 1791, but was very successfully completed afterward by his pupil, Süssmayer, partly from memory, and partly by repeating one of the first movements and adding new music where necessary.

The "Requiem" was soon followed by Haydn's "Creation," which forms a kind of landmark for the real commencement of the new movement. Haydn had been in England and had heard some of Handel's choral works for the first time in the last decade of the eighteenth century. Salomon had offered him an arrangement of Milton's "Paradise Lost" to set, and

when he returned to Germany he had it revised and translated, and set it forthwith. It was first performed privately in the Schwarzenberg Palace in Vienna, in 1798, Haydn at that time being sixty-five years old. It spread with marvelous rapidity to all musical centers, and was received with special enthusiasm in England. He followed it up two years later with "The Seasons," which goes by the name of an oratorio and contains choruses, but is, for the most part, much too light and secular to accord with the usual idea of that form. The next work of the kind by a great master was Beethoven's "Christus am Oelberge," known also as "The Mount of Olives" and sometimes as "Engedi." Here the resources of the orchestra are even more richly used than by Haydn, but the style is rather florid and operatic. It is a comparatively early work of the great master, as it came out in 1803.

The most prominent composer in the field in the early years of the nineteenth century was Spohr, the great violinist. He began composition with the view of supplying himself with concertos, and succeeded so well that his powers as a composer were soon much in demand. He was invited to compose an oratorio for the Fête Napoléon at Erfurt, in 1812, and for that occasion wrote his first version of "The Last Judgment," under the German name of "Das jüngste Gericht." He prepared himself deliberately by borrowing a copy of Marpurg's "Art of Fugue" from one of his own pupils and studying like a neophyte; and the result seems to have justified his labor at the time, though the oratorio in question is not one that is familiar. His principal work in this line was "Die letzten Dinge," which is also well known as "The Last Judgment."

This was produced in 1826. It is remarkable as the first oratorio which has the modern romantic character about it. There is a certain vein of poetry and a thoroughly modern color throughout, which comes partly from Spohr's skillful orchestration and partly from his chromatic manner; which, however, is not quite so pronounced in this work as in many others—as, for instance, in his oratorio "Calvary," which came out in 1835. Spohr's last composition of this class was "The Fall of Babylon," which was written for the Norwich Festival of 1842.

Contemporary with Spohr was F. J. C. Schneider (1786-1853), who wrote fourteen oratorios between 1810 and 1838, which at the time had much popularity. The best is said to have been "Das Weltgericht"; another is called "Sündfluth" (The Deluge). Another composer who had very remarkable success for a time was Neukomm (1798-1858). He was a pupil of Michael and Joseph Haydn. His oratorios "Mount Sinai" and "David" were much in vogue in England before Mendelssohn's "St. Paul" came out. They are not without artistic merits, though the treatment of the commandments in "Sinai" is extremely funny. "David" was written for the Birmingham Festival of 1834. The advent of Mendelssohn caused Neukomm to disappear in the background. Mendelssohn brought the skill of a complete master of both orchestral and choral effect to bear upon oratorio. He began with "St. Paul," which was first performed at Düsseldorf in 1836, and was soon taken up in England. Its success naturally led to his seeking for another subject, and he finally settled on "Elijah." But before that came out the "Lobgesang" or "Hymn of Praise" was produced at

Leipzig on the occasion of the celebration of the fourth centenary of the invention of printing. This work combines the qualities of a symphony and of an oratorio, and very emphatically illustrates the value of the combination of orchestral and choral effect.

The famous "Elijah" was completed in 1846, and first performed at Birmingham on August 26 in that year. Mendelssohn began another oratorio, "Christus," but died in 1847 before completing it. It seems to have been intended to be on the lines of the typical "Passions" of J. S. Bach. The influence of this form is very prominent in all his works of this class. He had taken up Bach's Matthäus Passion as early as 1827 and gave in Berlin the first performance it had received out of Leipzig since Bach's death. Its remarkable scheme came upon the world like a novelty, and it exercised an influence upon Mendelssohn's mind which was most powerful for good. He seized upon the salient principles of the "Passion" type, such as the admixture of narrative, reflective and dramatic principles in the solo parts, the use of types of choruses which represent masses of people who are personally engaged in the action of the drama, and the types of reflective choruses which express the mood of the spectator, and he applied these and other features of the old form with the happiest results. "St. Paul" is the more nearly on the "Passion" lines of the two, but the influence of the type is strong in both of them.

About the end of Mendelssohn's time composers became very busy with oratorios and similar works. Schumann produced the "Paradise and the Peri" in 1843 and the "Faust" music in 1848. In France the movement was early and brilliantly represented by

Berlioz's remarkable "Damnation de Faust" and "L'Enfance du Christ." H. H. Pierson's "Jerusalem" was brought out at the Norwich Festival of 1852. Sterndale Bennett's principal work, "The May Queen," came out at Leeds in 1858; and his "Woman of Samaria" in 1867. Sullivan brought out his "Prodigal Son" at the Worcester Festival of 1869, and his "Light of the World" at Birmingham in 1873; Macfarren his "John the Baptist" in 1873 and "Joseph" at Leeds in 1877, and both composers followed up their successes with more in the same line, the most popular of its kind being Sullivan's "Golden Legend" (Leeds, 1886). For England also were written Gounod's "Redemption" and "Mors et vita." In Germany the highest standard of this type of art is represented by Brahms's "Schicksalslied," "Triumphlied," "Nänie," "Gesang der Parzen," and "Deutsches Requiem." Bohemia is well represented by Dvořák's beautiful "Stabat Mater," his picturesque "Specter's Bride," "Ludmila," and the "Requiem." Denmark is represented by numerous works of the kind by Niels Gade; Italy by Verdi's notable "Requiem" for Manzoni, and Mancinelli's "Isaiah"; and Belgium by Benoit's "Lucifer."

Choral music seems to thrive best in countries where independent democratic spirit is strong and tempered with common sense. England has always been happiest in such music, and it is most natural that this characteristic form of modern art should thrive in her soil. Her composers have been extremely active and extremely successful in this line of late. Indeed, in the past thirty years the standard of such work has risen to a truly surprising degree. The richness and variety, the poetry and masterly craftsmanship of such

works as Mackenzie's "Rose of Sharon," Bantock's "Omar Khayyam," Stanford's "Eden" and "Revenge" and "Voyage of Maeldune," mark an awakening in English art which is most hopefully significant.

These indeed stand out as landmarks of the time; and they are worthily supplemented by many other fine works by the same composers, and by a flood of works by their fellow-composers which are all honorably artistic, and many of very high excellence, either for orchestral effect or choral effect, or for both together—such as Stainer's "Daughter of Jairus," "St. Mary Magdalen" and "Crucifixion," Lloyd's "Hero and Leander" and "Andromeda," Corder's "Sword of Argantyr," Bridge's "Callirhoë" and "Nineveh," Cowen's "Sleeping Beauty" and "Ruth," Williams's "Bethany" and "Gethsemane," MacCunn's "Lay of the Last Minstrel" and "Lord Ullin's Daughter," Gray's "Arethusa," and a great many others. The constant increase and improvement of the musical intelligence of choral societies all over the country invites good work on the part of composers; and undoubtedly good music wedded to good poetry makes an artistic combination as worthy of intelligent beings as any that exists.

CHAPTER XXVIII

NEW WORKS IN RECENT YEARS

The Close of the Nineteenth Century and the First Decade of the Twentieth—The Programme Principle—Wagner's Influence—The Russian School—Richard Strauss—Later European Composers.

THE few years intervening between the completion of the works previously discussed and the close of the year 1909 afford such striking illustrations of the tendencies of art latterly observable that they present almost the appearance of the summing-up of an argument. But in order to realize fully their confirmatory nature a short retrospect is necessary.

It is a curious coincidence that the last decade of the eighteenth century had analogously summed up the artistic tendencies of the latter part of that century by the appearance of Haydn's finest symphonies and Beethoven's earliest instrumental compositions, as well as Mozart's "Requiem" and "Die Zauberflöte"; thereby indicating the complete establishment of harmonic principles and the scheme of absolute art of which the sonata, the quartet, and the orchestral symphony were the highest types.

In the first quarter of the nineteenth century Beethoven brought the sonata type to its highest perfection, and at the same time signed its ultimate death-warrant, by indicating the road along which the art was destined

to travel to reach the so-called Romantic phase. He not only occasionally resorted to programme, but in his later works of the sonata order showed a marked inclination to abandon the forms usually employed in such classical works and to exceed the limitations of self-contained types, by infusing a human quality, a subconscious emotionalism, which proved in the end to be incompatible with the conception of music which was to be beautiful and interesting of itself without reference to external ideas. In this manner the type of art which was destined to serve the purposes of the newly awakening democracy was planted in the very being of the aristocratic sonata.

The Romantic phase then appears to be a transitional episode between the highly ideal abstract art of the sonata type and the familiar type of programme music which was reached at the end of the nineteenth century. The Romantic movement had been undisguisedly human, but human with reservations. It was full of the fervor of beautiful ideals, of fancies tender and subtle, of elevating aspirations, and of all such human inwardnesses as had a touch of distinction and even of sacredness, implying that art was a thing to be revered and cherished with respectful devotion. But the wide diffusion of the art, which was such a striking feature of the last quarter of the century, tended to obliterate reticence and respect. Its intrinsic qualities were affected by the lack of discrimination of the general audience; and the types of beauty which had been its fit attributes when it was the appanage of a small, cultured and luxurious class, no longer satisfied the minds of a wider public whose outlook on life was very different from that of the old privileged classes.

The art which is to appeal to an immense range of people of very different grades of intelligence and culture must speak plainly to them of things they can readily understand. Most of them have neither time nor disposition to cultivate insight into artistic subtleties and refinements or to develop their taste and powers of concentrated attention; and they look for something which has a tangible, practical reality behind it; so in order to be acceptable, music has to talk less about itself, and more about subjects of general interest. Thus what is called the programme principle —which was dimly discernible in a very lofty phase in Beethoven's work, and became more definite and tangible in the Romantic period—appears in its frankest and least reserved guise in the music which met with the widest general favor in the last decade of the century, and its development represents the decisive outcome of recent artistic evolution.

Many causes combined to this end. Among the most powerful must be counted the overwhelming profusion of performances of excerpts from Wagner's operas in concert-rooms all over the civilized world. When the fierce and bitter animosity which Wagner's music at first aroused died down, public taste swung over, and people could never hear enough of it. But as frequent performances of his entire works with the full panoply of theatrical representation presented insuperable difficulties in most countries, the public craving had to be satisfied with the presentation of the music by itself, without the theatrical adjuncts. Then the effect on the public of listening in concert-rooms to so much music which represents definitely indicated stories and human situations in a very vivid and exciting manner, was to

induce an attitude of mind inapt to listen to real concert music, which spoke for itself without reference to things external. It is also worth observing that Wagner's systematic adoption of the device of the *Leitmotiv* has not only been followed by operatic composers, but when also adopted by composers of instrumental music it has tended to replace the older methods of classical and tonal form.

Another influence which has told in the same direction is the enormous development of mere technique in the performers of recent years. Men have been busy finding out ways of overcoming difficulties and enlarging the store of the practicable resources of instruments for over three hundred years; but, as in the department of applied science, the advance has been greater in the last fifty or sixty years than in all the antecedent time. This has placed at the disposal of composers instrumental effects of extraordinary brilliancy and vivacity—a veritable plethora of opportunities for producing exciting contrasts of color and variety of tone; and this just happens to adapt itself to the trend of the development of general intelligence and taste. For it is to be observed that the greater diffusion of musical opportunities appears of late to have developed quickness rather than understanding, the capacity to enjoy the moment rather than to be deeply interested, and the disposition to delight in dexterity and dazzling superficialities of presentment rather than beauty or nobility of thought and feeling.

The gravitation of public taste and its influence upon art is shown in the reaction toward primitive emotional expression, and the art of the less critically self-conscious races such as the Czechs and the Russians. The

Czechs have always been among the most spontaneously musical races of Europe, and the fiery vivacity of some of the music of Friedrich Smetana (1824-84), such as his overture to "Die Verkaufte Braut," and his string quartet in E minor, which he called "Aus meinem Leben," illustrates their disposition very happily; while his pupil Antonin Dvořák as their foremost representative composer greatly enhanced their distinction on this account, and illustrated in a very attractive manner the characteristics of a race more primitive and unsophisticated than those among whom art had attained to its greatest and noblest manifestations. These facts are patent in the liveliness of Dvořák's rhythms, his dexterous manipulation of figures of accompaniment, and the native freshness and directness of his tunes, many of which might have been borrowed from the lips of his own peasants or the emancipated negroes of America; while the exuberance and verve of his orchestration betray the Oriental strain in his disposition. The interest which had been aroused by his interesting and expressive "Stabat Mater" and his weird cantata "The Specter's Bride," the "Requiem," and several genial and attractive symphonies, has since been sustained by the "Carneval," "In der Natur" and "Otello," by his "New World" symphony, a violoncello concerto, and some fine quartets and songs.

The qualities of races but little advanced from primitive temperamental conditions are even more conspicuous in the Russian music which almost submerged the world, especially England and America, in the closing years of the last century. The music has naturally appealed to the awakening intelligence of the musical

masses by vehement emotional spontaneity, orgiastic frenzy, dazzling effects of color, barbaric rhythm, and unrestrained abandonment to physical excitement which is natural to the less developed races. The first notable presentment of a work in England by Tchaikovsky was the performance of his concerto in B flat minor at the Crystal Palace, London, on March 12, 1876; but the time was scarcely ripe for his work to exert its full fascinations. The exact date when the Russian musical invasion commenced may be given at the performance of his "Pathetic" symphony (in B minor, No. 6) by the Philharmonic Society under the conductorship of Sir Alexander Mackenzie on February 28, 1894. From that moment Wagner's supremacy in the concert-room ceased to be uncontested. Public taste gravitated from the subtle emotionalism of the great Teutonic musical dramatist to the more obvious and highly accentuated passion of the more primitive and plain-speaking Russian. But, as has been before pointed out, Wagner had prepared the way, and had unintentionally led public taste away from the purity of abstract art and created a craving which could only be satisfied with draughts of stimulants of ever-increasing strength.

Tchaikovsky admitted that the "Pathetic" symphony had a programme, and he had intended to call it decisively a programme symphony, but was dissuaded by his brother. But at any rate the public recognized the singular intensity of its emotional expression, ranging from the exaltation of rapture to the depths of almost comatose collapse. As a human document the work was unmistakable, and the interest generated by such a graphic study of subjective states induced a de-

sire for more of the same kind, and for a time the Russian composer became the central object of musical public interest. Several of his other symphonies, especially those in F minor, No. 4, and E minor, No. 5, were eagerly welcomed, though they never attained to the extreme popularity of the "Pathetic" symphony. Of his other works the sparkling and fanciful "Casse-noisette" suite of ballet tunes most nearly touched the high-water mark of public favor, while much interest was excited by his overture "1812," which, as a musical expression of the frenzy of national joy, is remarkably frank and graphic. Of his other numerous works the vivid fantasia for orchestra "Francesca da Rimini," written as early as 1880, is one of the most notable. It was recognized that the composer represented a new type, and the public having gained the clue to it were eager for enlargement of their experience, and chamber music, songs, pianoforte pieces, all characterized by the same profusion and spontaneity of utterance, rich color and excessive sensibility, were welcomed.

The taste thus generated led to acquaintance being desired with the works of other Russian composers, such as Alexander Borodin, whose symphony in B minor appears to have been first performed in England in 1896, while many other works won favor in various branches of art. Rimsky-Korsakov (1844-1908), composer of operas and brilliant orchestral music, enhanced the Russian prestige with his "Capriccio Espagnol" and his "programme" symphony "Antar," performed in England in 1896 and 1900 respectively. Among living Russian composers most attention has been deservedly attracted by Alexandre

Glazunov (born 1865), who stands out with distinction among his fellows as being more in touch with the ideals of the great art of the past. Though capable of great force of expression, and gifted with the remarkable instinct for instrumental effect which seems to be characteristic of an Oriental strain, he holds his passion more under control; showing more sense of proportion, continuity of development, love of design, and purity of style than other notable composers of his race. The works which attracted most attention before the end of the last century were his fine symphonies in B flat and C minor, Nos. 5 and 6.

But by the time the musical public were becoming familiar with the Russian type and their interest was ready to transfer itself to fresh developments, the most extreme form of programme music yet presented to the world was just ready to satisfy their craving for a further new experience. The remarkable composer Richard Strauss (born June 11, 1864) may be admitted to have explored the region of programme music in a manner which was new at least in its uncompromising frankness. He had begun his career more or less within the range of the old order with interesting and effective chamber music, and it was not till comparatively late that he found the field in which he could demonstrate his full powers. The works which in the last century represent him in the later phase began with the symphonic poem "Don Juan," produced under Hans von Bülow at Berlin in 1888; "Tod und Verklärung" followed in 1890, and "Macbeth" in the same year. "Till Eulenspiegel" came out at Cologne in 1895; "Also sprach Zarathustra" at Frankfort in the same year; "Don Quixote" at

Frankfort in 1897, "Ein Heldenleben" at the same town in 1899; and later his "Symphonia Domestica." (His principal works produced since the opening of the present century are considered in the biographical section of the present series.) The nineteenth century thus completed itself, and summed up the outcome of its musical proclivities.

Richard Strauss is a man of fine intellectual conceptions, who endeavors to expound them in the most vivid terms the complex possibilities of the modern orchestra afford. Gifted with deep feeling, a great sense of humor, with phenomenal resourcefulness, and the conviction that the ends justify any means which tend to complete and striking characterization, he so far represents the most uncompromising manifestation of musical art as a means to express vividly something outside itself. Abandoning the hope that music can any longer have full measure of vitality while produced in accordance with the old ideals of abstract beauty and interest of development, he frankly faces the problem of finding ideas external to music which are sufficiently rich in interest and sufficiently typical and comprehensive to be worth expending the fullest resources of art in their emotional and quasi-pictorial presentment.

With the view of making his intention clear and unmistakable he resorts to realistic devices of the most graphic description, and to combinations of sounds which show frank disregard of euphony; but at the same time he shows mastery of design of a new kind in the laying out of his work in broad and even impressive lines, in which the sequence of moods and the contrasts between them are employed as much as

the old principles of the relations of keys to give the effect of design, and he has the gift of presenting his material in a manner which arrests attention. He also illustrates in the fullest degree the advanced evolution of orchestral style—wherein the dazzling variety of passages which illustrate the idiosyncrasies and characteristic capacities of the various instruments employed, are effectually welded into artistic unity.

While the attention of the widest general public was especially drawn to the more urgent forms of novelty, the main stream of serious artistic work continued in ample volume and fine quality. In England Sir Alexander C. Mackenzie produced his merry and vivacious overture "Britannia" in 1894 and his oratorio "Bethlehem" in the same year, and he added to the copious list of his compositions the suite "From the North" in 1895, his "Scottish Concerto" for pianoforte and orchestra in 1897, and his music to the dramatized version of Barrie's "Little Minister" in the same year. The remarkable facility and artistic perception and resourcefulness of Charles Villiers Stanford were illustrated by his fine symphony "L'Allegro ed il Pensieroso" and his pianoforte concerto in G, both of which came out in 1895; by his "Requiem," which was produced at the Birmingham Festival in 1897; by his "Te Deum," which came out at the Leeds Festival in 1898; by his variations for pianoforte and orchestra on the old tune "Down among the Dead Men," produced in 1899, and his setting of Henley's poem, "The Last Post," produced in 1900, and many other characteristic and admirable works. Frederic H. Cowen enhanced his eminent position among English composers by his cantata "The

Water Lily," which came out in 1893, his "Transfiguration," his suite "In Fairyland," his "Dream of Endymion," his fine "Ode to the Passions," and his "Idyllic" symphony.

Edward German (born 1862), who had won deserved popularity by the characteristic freshness and spontaneity of his ideas and the effectiveness of his orchestration, gave further proof of the range of his powers by his symphony in A minor (produced at the Norwich Festival of 1893), his effective suite for orchestra in D minor, his English fantasia, since known as "A Rhapsody on March Themes," his symphonic poem "Hamlet," and by much admirable and appropriate music to plays, such as the music for "Henry VIII," "The Tempest," and "Romeo and Juliet." Frederick Cliffe, whose brilliant first symphony had attracted much attention in 1889, followed it up with a second in E minor (produced at the Leeds Festival in 1892) and with a violin concerto successfully played by M. Tivadar Nachez at the Norwich Festival in 1896. Sir Frederick Bridge brought out his cantata "The Flag of England" in 1897, and his "Ballad of the Clampherdown" in 1899. Charles Harford Lloyd produced "A Song of Judgment" at the Hereford Festival in 1891, a "Ballad of Sir Ogie and the Ladie Elsie" at the Hereford Festival in 1894, a masterly concerto for the organ at the Gloucester Festival in 1895, a Festival Overture at Gloucester in 1895, and a "Hymn of Thanksgiving" in 1897. Hamish MacCunn (born 1868) brought out "Queen Hynde of Caledon" in 1892, and the suite "Highland Memories" in 1897. Arthur Somervell (born 1863), who had delighted the lovers of imaginative and finished

art by his characteristic songs, produced the orchestral ballad "Helen of Kirkconnel" in 1893, a cantata, "The Forsaken Merman," at the Leeds Festival in 1895, and "Ode to the Sea" at the Birmingham Festival, 1897.

H. Walford Davies first began to attract interested attention by a symphony in D and the choral ballad "Hervé Riel" in 1895, and a setting of Psalm xxiii and a motet, "God Created Man," in 1900. W. H. Bell produced the symphonic poems "Canterbury Pilgrims" in 1898 and "The Pardoner's Tale" in 1899, and a symphony, "Walt Whitman," in 1900. William Wallace, an ardent sympathizer with the phases of art which represent its characteristic movement in recent years, produced the symphonic poem "The Passing of Beatrice" in 1892, a strenuous prelude to the "Eumenides" of Æschylus in 1893, an overture "In Praise of Scottish Poesie" in 1894, a symphonic poem, "Amboss oder Hammer," in 1896, a symphonic poem, "Sister Helen," in 1899, a symphony, "The Creation," and a cycle of "Freebooters' Songs" in 1899, and a suite of five movements having reference to Maeterlinck's "Pelléas and Mélisande" in 1900, works which show a poetic and cultured mind, and keen and genuine feeling for orchestral expression.

The young composer Coleridge-Taylor (born 1875) sprang to a prominent position in the musical world with his "Hiawatha," the first part of which was performed for the first time at a concert given at the Royal College of Music in November, 1898. Two more parts were afterward added to complete the work, and in that form it has since been everywhere in request. His powers have also been illustrated by other popular works in various branches of art, such

as his Orchestral Ballade (1898) and his "Scenes from an Everyday Romance" (1900). A new light of exceptional brilliancy came rapidly to the forefront in the last five years of the nineteenth century in the person of Edward Elgar (born 1857), whose fine cantatas "King Olaf" and "Caractacus" came out respectively at Hanley in 1896 and at Leeds in 1898. And yet more convincing proofs of his fertility of invention and exceptional mastery of orchestral effect were afforded by his remarkable Orchestral Variations (1899); and he completed the century and aroused the interest of the musical world even more effectually by his vivid and imaginative oratorio "The Dream of Gerontius," a presage of further striking works which duly made their appearance as the first-fruits of the new century.

Besides cultivating these larger forms of art, English composers showed an awakening to the artistic opportunities afforded by chamber music, and works of high quality in this branch were produced during the last decade of the century by the older composers, as well as by many of the later generation, such as H. Walford Davies, Richard Walthew, and Ernest Walker.

The volume of fine music represented by such copious productivity of British composers in all branches of art (for opera has yet to be touched upon) is a most significant feature in the closing years of the last century. For while in earlier days the manifestations of their higher energies had been overmuch centered in Anglican Church music—which stood by itself as a self-contained branch of art, presenting some fine compositions here and there, but barely in touch with

the general movement of art in the world—this branch of Church music itself began to expand into wider significance in the first half of the century, as in the works of John Goss (1800-80), Henry Smart (1813-79), Thomas Attwood Walmisley (1814-56), and Samuel Sebastian Wesley (1810-76), whose justly beloved anthem "The Wilderness" was performed with orchestral accompaniment at the Birmingham Festival in 1852; and while the secular branches of art were often illustrated by W. Sterndale Bennett, as before noted, the growth of respect for music and a more liberal and appreciative attitude toward musicians encouraged composers of serious aims and higher capacities to take a line more independent of the cogency of ephemeral recognition, and in the last decade of the century the music produced by native composers attained to the cosmopolitan condition which successfully illustrates all its various branches, and takes its place worthily in the grand scheme of general art.

European composers of various nationalities were also very active in the latest years of the last century, and many striking works were produced. In Italian music the most conspicuous manifestation in the range of the concert-room was the attention bestowed upon the young composer Lorenzo Perosi (born 1872), whose oratorios "La Transfigurazione di Gesù Cristo," "La Risurrezione di Lazzaro," and "La Risurrezione di Cristo" aroused considerable excitement by a certain novelty and ingenuousness of treatment, which was maintained by the oratorio "La Passione di Cristo." The traditional predisposition of Italian composers for opera leaves them comparatively little energy for con-

cert-room music; but among the works which illustrate the powers of the most distinguished Italians of the time may be mentioned the symphony "Epitalamio" of Giovanni Sgambati (born 1843), produced in Italy in 1888, and his "Requiem," which came out in 1896. The brilliant overture "Cleopatra," which the composer Luigi Mancinelli (born 1848) brought to its first hearing in England at the Norwich Festival of 1893, was in reality an early work, and the vivid "Hero and Leander" had its first performance as opera in New York at the Metropolitan, 1903. Of more decisively concert-room works by the same composer the "Scene Veneziane" may be mentioned, which came out in 1890. Among distinguished examples of the highest forms of art the admirable symphony in D minor by Giuseppe Martucci (born 1856) is also worthy of record, a work first performed in England at a concert given at the Royal College of Music in 1898. Among other works by this able composer and conductor a pianoforte concerto, a pianoforte quartet and trio, and a violoncello sonata are included.

In connection with French music of the concert-room the most interesting feature in recent years was the late revelation of the high qualities of the works of César Franck (1822-90), which had hardly even attained to a hearing in his lifetime. The recent performances of his symphony in D minor, his choral work "The Beatitudes" (first performed at Glasgow in 1900), and his violin sonata, pianoforte quintet, and string quartet made apparent their high qualities of sincerity, deep feeling, and artistic interest, and aroused a natural astonishment that a composer of such rare powers should have been entirely without

recognition while he lived. Among well-known French composers the versatility of Charles C. Saint-Saëns has been illustrated by his cantata "Nuit persane," produced in 1893, a new trio for pianoforte and strings, which came out in 1892, and a fifth pianoforte concerto in 1896. Charpentier (born 1860) illustrated the tendencies of the day in his suite "Impressions d'Italie," his symphonic poem "Napoli" (1891), his opera "Louise," now well known in America, and his symphonic drama "La vie du poète" (1892), while Vincent d'Indy produced his symphonic poem "La forêt enchantée" and the music to "Karadec" in 1892, and a string quartet in 1898.

As illustrating the activity of Scandinavian composers, the symphony in D minor of the Norwegian C. Sinding (born 1856) may be referred to, which was performed in Berlin in 1895 and at the Crystal Palace in 1898, and attention has also been attracted to the same composer's pianoforte concerto, pianoforte quintet, and quartet for strings; and Edvard Grieg added to his earlier well-known compositions a scene "Der Einsame" in 1892.

The Belgian composer Edgar Tinel (born 1854) in the later years of the century attracted interested attention by his oratorio "St. Francis," performed at the Cincinnati Festival of 1894 and at the Cardiff Festival in 1895, and he has also written a mass (1892), *entr'actes* to Corneille's "Polyeucte," the cantatas "Kollebloemen" and "De drie Ridders," and a Te Deum.

In Germany the veteran Max Bruch brought out a third violin concerto in 1891, "Leonidas" in 1893, and "Moses" in 1895. Karl Goldmark (born 1830) pro-

duced a sonata for pianoforte and violoncello and a second suite for violin and pianoforte in 1893, and an overture, "Sappho," and a scherzo for orchestra in 1894, and a setting of Psalm cxiii in 1897. The popular composer Moritz Moszkovski brought out a second pianoforte concerto in 1898, and Engelbert Humperdinck, who had won such deserved favor in the department of opera, produced a Moorish rhapsody, which was performed at the Leeds Festival in 1898. In the latest years of the century Felix Weingartner (born 1863) came into considerable prominence both in Germany and in England, the works by which he gained much honorable reputation being the symphonic poems "King Lear" (1897) and the "Gefilde der Seligen" (1897), a symphony in G major (1899), and a symphony in E flat major and several string quartets and songs. The British-born composer known as Eugen d'Albert not only maintained his reputation as one of the finest living pianists, but gave to the world "Der Mensch und das Leben" in 1894, and a second pianoforte concerto in 1897, besides several operas which will be referred to later.

It is noticeable that the most conspicuous and interesting features of the music of the later years of the nineteenth century were in the range of music for the concert-room. In the operatic field the preëminent achievements of Richard Wagner left comparatively little room for anything of the nature of new departures, but the influence of his theories and examples has been universally perceptible in the comparative abandonment of set forms and the adoption of a style and method better adapted to the requirements of continuous dialogue and dramatic develop-

ment. The most notable work in this sphere of art was Verdi's "Falstaff." In this work the veteran composer again manifested the vigor and distinguished style which had come with such a surprise upon the musical world with his "Otello." Here indeed was one of the most remarkable instances of a composer's arriving at his highest standard of fine artistic thought and diction at the age of eighty, maintaining all the freshness of humor and gaiety and warm feeling of his youth, and addressing himself, with full measure of success, rather to musicians of culture and taste than to the wider public he favored in earlier years.

Of almost equal importance and significance has been the phenomenal success of the opera "Hänsel und Gretel," by Engelbert Humperdinck (born 1854), which began its happy career in 1894. Something of the success may have been attributed to the folk-songs and tunes of that type which are embodied in the work, which illustrate the disposition before referred to, in connection with Czech and Russian music, to seek for the renewal of spontaneous vitality in the primitive foundations of music, though it is true that in Humperdinck's case the reversion is in a more natural and healthy phase. But the opera also won its way by the attractiveness of the subject and the singular aptness with which the composer adopted and maintained a style perfectly and consistently adapted to the innocent sweetness of a children's legend.

Apart from these two specially prominent works, operas were produced in all countries in great profusion in the last decade of the century. Of the younger Italian composers Giacomo Puccini (born 1858) deservedly attracted attention by his admirable opera

"Manon Lescaut" in 1893. He enhanced the estimation in which he was held by "La vie de Bohème" in 1896, added another remarkable work in "La Tosca" in 1899, and began the new century with "Madame Butterfly." Ruggiero Leoncavallo (born 1858) brought out the highly dramatic "Pagliacci" in 1892, "I Medici" in 1893, "Tommaso Chatterton" in 1896, another "La Bohème" in 1897, and "Zaza" in 1900. Umberto Giordano (born 1869) produced "Mala Vita" in 1892, "Regina Diaz" in 1894, "André Chénier" in 1896, and "Fédora" in 1898. Pietro Mascagni (born 1863), who had made such a mark with his dramatic "Cavalleria Rusticana" in 1890, followed it up with "Amico Fritz" in 1891, with "William Ratcliffe" and "Silvano" in 1895, and with "Zanetto" (1896) and "Iris" (1898); and Alberto Franchetti (born 1860) produced "Cristoforo Colombo" in 1892, "Fior d'Alpe" in 1894, and "Il Signor de Pourceaugnac" in 1897.

The profuse operatic facility of French composers was illustrated by J. E. F. Massenet's "Werther" in 1892, by his vivid "La Navarraise" in 1894, by "Thaïs" in 1894, by "Sapho" in 1897, and by "Cendrillon" in 1899; by Saint-Saëns's "Phryne" in 1893, "Antigone" in 1894, the ballet "Javotte" in 1896, and the music to "Déjanire" in 1898; by Alfred Bruneau's "Le Rêve" (1892), "L'attaque du moulin" (1893), and "Messidor" (1897); by Vincent d'Indy's "Fervaal" (1895); and by Debussy's "Pelléas et Mélisande" (1902).

In Germany also there was a profuse outpouring of operas during the short period under consideration. Richard Strauss gave the world further evidence of his copious facility in "Guntram," which came out at

Weimar in 1894, "Feuersnot," at Dresden in 1901, "Salome," at Dresden in 1905, and "Elektra" (1908). Goldmark produced "Das Heimchen am Herd" in 1896, and "Die Kriegsgefangene" in 1899; Hugo Wolf, "Der Corregidor" in 1896; Hans Pfitzner, "Der arme Heinrich" in 1895; H. Zöllner made a mark with "Bei Sedan" and "Der Überfall" in 1895, and with "Das hölzerne Schwert" in 1897, and "Die versunkene Glocke" in 1899; and Felix Weingartner with "Genesius," which was produced in 1895; while Eugen d'Albert illustrated the spirit of the country of his adoption in "Der Rubin" in 1893, in "Ghismonda" in 1895, "Gernot" in 1897, "Kain" in 1899, and "Tragabaldas" and "Tiefland" in 1907.

In England the long and successful story of the so-called Gilbert and Sullivan type of Savoy operas came to an end with "The Rose of Persia" (produced in 1899), for which Basil Hood supplied the libretto. The composer herein showed all his old vivacity, gaiety, and tunefulness. He died, widely lamented throughout the whole country, in the following year. "The Emerald Isle," part of which had been written before his death, was completed by Edward German and produced in 1900. Of other achievements in the line of opera in England the most notable was Charles Villiers Stanford's brilliant "Shamus O'Brien" (1896), an Irish opera full of native humor and sensibility and dexterous artistic work. Frederic H. Cowen also produced several serious operas of large dimensions toward the end of the century, as "Signa" in 1893 and "Harold" in 1895. Sir Alexander Mackenzie adventured into the province of humorous Savoy opera with "His Majesty" in 1897. Hamish

MacCunn also produced the opera "Jeanie Deans" in 1894 and "Diarmid" in 1897. Granville Bantock illustrated the tendencies and abilities of the younger generation in "Rameses II," 1891, "Cædmar," 1892, "The Pearl of Iran," 1894, and works of a dramatic cast for the concert-room.

In the United States the only important operatic works that have come to light in recent years were Walter Damrosch's "Scarlet Letter," Arthur F. Nevin's "Poia," Converse's "Pipe of Desire" and "The Sacrifice," Chadwick's "Judith" and Paine's "Azara," the last two having been heard only on the concert stage. All of which are referred to, as well as later compositions of every class, in the section devoted to Music in America.

MODERN INSTRUMENTS CHIEFLY ORCHESTRAL

THEIR PREDECESSORS AND PRESENT USES

THE RISE OF THE MODERN ORCHESTRA

ALTHOUGH our modern orchestra owes its composition and development directly to the musical drama which sprang into being in Italy at the end of the sixteenth century, calling into requisition most of the instruments known at the time, the evolution of the orchestra really began with the first grouping together of simple reed-pipes, flutes, primitive harps and drums, in which the three orders of musical instruments, percussion, wind, and strings, were duly represented. In fact any large group of instruments has been called an orchestra. Greece witnessed some notable ones, but others must have existed in Egypt at an earlier date.

In sketching the history of the orchestra we are not only concerned with its physical constitution, but also with the use made of it as a complete body (1) to accompany the voice, the dance, or any other rhythmical action; (2) to characterize and comment subjectively upon what the voice has to express; (3) to express more or less indefinite emotions, thoughts, and musical ideas without the aid of words.

Evidences of the first and most popular of these

functions of the orchestra abound in every civilization from the earliest historic times. Bands composed of such stringed and wind instruments as were known at the time were called into requisition for religious rites and ceremonies, military displays and festivals, banquets and obsequies. The orchestra in some form or other has, in fact, from the earliest times formed an integral part of the life of the people.

The second and more subjective function of the orchestra marks a great advance and presupposes the existence of some form of drama with music, the most perfect form of which was the classical Greek drama, more closely allied to the modern music-drama of Wagner than to the literary drama. Although the musical ideals of classic Greece were diametrically opposed to the orchestra as understood at the present day, yet it was the Greeks who conceived the idea of the true function of the orchestra in musical drama.

The third function of the orchestra was the performance of purely instrumental music, which modern usage divides into the two schools of absolute and programme music. Absolute, or pure, music aims to please merely by beauty of sound, while programme music tries to give a definite picture of objects, events, and the emotions they arouse. The Greeks made no such distinction, but possessed both schools.

The Greek tragic writers strove to make their music represent the different phases of action, and the feelings of the characters; we have reason to believe that they succeeded, but unfortunately none of the music of the tragedies is extant.

Egypt.—A fresco to be seen at the Britism Museum, copied from a mural painting in Egypt, and dating

from between 1700 and 1300 B.C., represents a band at a gentleman's house, celebrating the festival of the god Ptah; women musicians are included in the band; one is playing a double flute and three maidens are marking the rhythm by clapping their hands. From other frescoes we find that Egyptian bands consisted of many instruments, such as harps, guitars, lyres, lutes, flutes, single and double pipes or shawms, trumpets, cymbals, drums, sistrums, etc. Harmony, as we understand it, was unknown to the Egyptians, but they used the different instruments in octaves, with perhaps a drone or ground bass, to vary the tone-color and volume of sound. It is evident from the innumerable traces remaining to us that music was highly esteemed as an art in Egypt at the time when civilization had reached its apogee; fragments of treatises on papyrus, relating to the tonal art, have been discovered. Conservatories existed, and the few pictures of them that still remain prove that they were much like our own institutions, with special rooms for teachers, and even a lunch-room.

India.—Far more definite and accurate are the evidences of the high degree of cultivation attained in this art among the Hindus and Chinese; of the latter, however, little need be said, as their arts had almost no influence on those of Europe. Hindu music, on the contrary, had certain affinities with that of the Greeks. Hindu treatises on music, of great antiquity, in prose and verse, are extant. Hindu instruments were many and comparatively perfect, the stringed predominating, a sure sign of the high development of the art. Music was closely connected with religion and its many rites. We know, however, that it had at least one secu-

lar use in the drama, said to have been invented in prehistoric times by the sage Bharata (a mere personification, since the word Bharata signifies an actor). The most ancient specimen is a drama treating of the history of the god Krishna, which is still extant, and contains songs and choruses. At a much later period (56 B.C.) the great drama of Sakuntala was composed by Kalidasa, containing songs with instrumental accompaniment. The chief musical instrument was always the vina, much like a narrow guitar with seven strings. The ravanastron was an elementary violin with two strings. Chinese music as given in Europe and America is chiefly noise, but such instruments as the kin and the che, provided with silk strings, are exceedingly delicate in effect. In Japan, the koto is of the same type, while the samisen is a sort of three-stringed mandolin.

Greece.—Among the Greeks music had a high and noble significance; it was studied from a philosophical point of view, and aimed at appealing to the mind and soul, rather than to the senses. It was thought that Pythagoras had invented the diatonic and chromatic systems of natural scales, but a double reed-pipe found in 1890 by Prof. Flinders Petrie in the mummy-case of the Lady Maket, dating from at least 1100 B.C., when played gives both a diatonic and a chromatic scale, which leads us to think that Pythagoras, during the eighteen years he spent in Egypt, may have learned these systems from the Egyptian priests and introduced them into his native country.

Greek Drama.—The earliest music in Greece was used in religious rites and military evolutions, but with the rise of the drama came the use of the orchestra, as

we understand it, in the theater or concert. The word orchestra is derived from the Greek word ὀρχέομαν, to dance. It was applied to the space between the auditorium and the proscenium or stage, in which were stationed the chorus and instrumentalists; the latter consisted chiefly of players on the aulos (the reed-pipe, either oboe or clarinet) and the cithara or phorminx. The chorus danced at intervals round the thymele or altar to the god Dionysus, singing an explanation of what was going on on the stage in unison, with instruments playing in unison and in octaves with the voices, or perhaps even with a harmonic basis of instrumental music. Unfortunately none of the music is extant. The primary function of the orchestra in classic Greece, therefore, was not to accompany, but to make clear by music the action of the drama, which was thus the prototype of the modern musical drama. Wagner, therefore, did not revolutionize, but revived the old classical traditions.

The Tragedy.—The Greek drama comprised tragedy and comedy. It is with the former that we have most to do. Tragedies (derived from τράγος, a goat, and ᾠδή, a song) were so called on account of the goats sacrificed to the god Dionysus, and were gradually evolved from the fusion of (1) the dithyramb, a hymn in honor of that god, usually accompanied by auloi and citharas, and (2) rhapsodies—epic poems chanted by wandering rhapsodes to instrumental accompaniment.

To Thespis (535 B.C.) is attributed the invention of the tragedy. He was the first to introduce an actor to vary the monotony of the dithyramb; this actor stood on a table—the embryo stage—and addressed his chanting speech to the coryphæus or chorus. Æschylus

(525-456 B.C.) added a second actor, Sophocles (495-405 B.C.) a third. These writers were also musicians, and composed the music for their own dramas. Euripides, however, was no musician, and we hear that he had to engage a professional to compose the music for his dramas. The orchestra did not increase in numbers until the days of the Roman drama.

Roman Drama.—The Roman drama was founded on the Greek, with the addition of native forms. The first regular performance of a Roman drama in a theater was in 240 B.C. The main differences between the Greek and Roman dramas are that in the latter more voices and instruments were used, the trumpet, buccina, and lituus being added; and that the chorus was transposed to the stage and occasionally took part in the acting. The Romans, even more than the Greeks, were decidedly fond of wind instruments. They had examples of almost every one that we possess, although our flutes, oboes, bassoons, and so on, did not come directly from the Roman models.

Downfall of the Drama.—Dance and song gradually ceased to form part of the tragedy. This was the beginning of the end; the downfall came in the middle of the fourth century A.D. Morality being at a very low ebb on the Roman stage, the Church condemned the theater, and the drama died out completely till the fifteenth century.

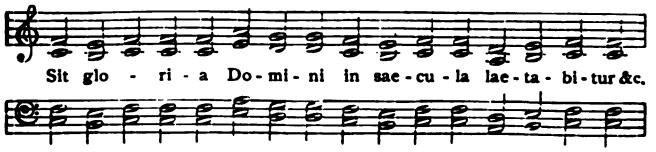
Monasteries and Churches.—In the interim, the fostering of the art of music was left entirely to the monasteries, so far as vocal music was concerned. Instrumental music was banished from the early Church ritual, being too much associated with the ribald, sensual music of the Roman theater, and it would have

fallen into disuse but for the musicians, who, after the closing of the theater by order of the Church, wandered through the country playing and singing at festivals, appearing and disappearing without leaving a clue to their whereabouts.

Europe.—No trace of harmony has as yet been discovered in Europe before the tenth century; a number of instruments still either playing in unison, to increase the volume of sound, or to give color by varying the use of the instruments according to the effects required. From some allusions in the old chronicles of England it is thought that harmony was known and practised in many parts of the land, especially in Northumbria, before the days of Hucbald. There were many schools of music in England at the time of Alfred the Great, notably at Oxford; and we find that he conferred the title of Professor of Music upon a teacher of theory in 886.

First Steps in Harmony.—The first steps in harmony were made in the beginning of the tenth century, when Hucbald, a Flemish monk, introduced into the Church ritual two-part songs or chants, in which the voices or parts moved in fourths, and very harsh and discordant they sounded. Octaves were used to double the voices, thus bringing about fifths also. This first step in the evolution of harmony is important, as, although it only concerned the voice at first, the development of instrumental music was impossible without it, and from this date instruments were no longer used merely to accompany the voice, but followed closely the development of harmony, which may thus be regarded as directly responsible for the invention of certain instruments and for improvements in the con-

struction of others. This is not the generally accepted theory, but an examination of the construction of the organistrum taken in conjunction with the origin of its name leaves no room for doubt on this point. The organistrum, which appears on the Romanesque sculptures and in the miniatures of the eleventh and twelfth centuries, owes its existence directly to Hucbald's organum, or diaphony, as it was called. The organistrum had three strings tuned to the octaves of C with an intermediate F or G, and all sounded at once by the friction of a wheel set in motion by a crank. By means of keys or movable frets fixed along the neck and taking effect on all three strings at once, the succession of octaves and fifths known as the organum was produced. No other style of music was obtainable from the organistrum, and it stands as a unique instance on record of an instrument invented for a special form of music and incapable of producing any other. When the organum no longer found favor and had been replaced by polyphony on a ground bass, the organistrum was modified to produce the new style of harmony and survived as the symphonia or hurdy-gurdy.



EXAMPLE OF THE ORGANUM, ASCRIBED TO HUCBALD BY COUSSEMAKER.

Guido of Arezzo, in the early part of the eleventh century, developed the free style of diaphony, and systematized the intervals. Free diaphony caused certain harsh intervals to be modified, and Guido em-

phasized the idea that music should please. In the organum, the lower voice was not allowed to go deeper than a certain prescribed position. If the upper voice started on this note, the lower voice merely repeated it until the upper voice had gotten a fourth away, when the harmony proceeded in fourths, the lower voice moving up and down as needed, but never going below its fixed limit. Guido named and described the new intervals formed in this process. He also allowed the upper voice to be more florid in style than the other, thus giving the effect of a cantus firmus with descant in a higher order of counterpoint. Guido is famous in history because he gave syllables to the notes of the scale—another invaluable service to music.

Polyphony.—Guido died about 1050. His system of organum was soon superseded by one that included contrary motion as well as oblique and parallel motion. This new organum was well developed before 1100, for in that year Johannes Cotto wrote a treatise on it. An English neume manuscript (the Winchester Troper) shows contrary motion dating from the year 1080. Fourths, fifths, and octaves were the chief intervals, but the others soon came into frequent use. From this system came the rise of part-writing, which led to the early English school of counterpoint, and from that to the French, Flemish, Italian, and German schools—a development that forms a large part of musical history, finding its echo and culmination in the glory of Bach's inimitable fugues.

There is reason to think that the contrapuntal part-songs formed part of the repertoire of instrumentalists from an early epoch, independent instrumental

music being of later date. As an immediate result of the introduction of polyphony, such instruments as lutes, vielles, flaiols or flûtes à bec, shawms, cromornes, cornets, hunting-horns, and bagpipes were made in different sizes corresponding approximately to the pitch of the human voices, treble, alto, tenor, bass. This forms a very important step in the evolution of the orchestra.

Counterpoint.—The term counterpoint came from the Latin words "punctum contra punctum," or note against note. In the higher orders several notes could be sung against one. Counterpoint was first developed in England, being merely the part-writing (melody supported by melody) that arose from the new organum. Measured notes were discovered in England by Walter Odington, and Franco of Cologne invented them at about the same time. Jean de Muris, writing in 1325, praised the French school of the preceding century, and at the same time stated that it was based on the English method. There must have been a fully developed English school soon after 1200, for the famous "six men's song," entitled "Sumer is icumen in," dates from about 1215. This was a remarkably perfect and pleasing four-part canon, the two extra voices giving a drone bass. We may safely assert from this that counterpoint flourished from 1200 to 1600. The troubadours and other minstrels of their day composed in the monodic style suitable for solo singing; but almost all their music is lost. It was not until the advent of opera that the contrapuntal style had any real rival for supremacy.

Town Bands.—We must now return to instrumental music and see how the first regular orchestras were

formed in towns. The returning crusaders brought many new instruments with them from the East, giving a fresh impetus to instrumental music. The minstrels and bards in England, Scotland, and Wales, the troubadours of Provence, the trouvères of Normandy, and the minnesingers of Germany, wandered from castle to town, sang their love-ditties or their heroic songs to the fiddle or harp, for the love of the art or of an adventurous life. They often brought in their train mountebanks, pipers, or jongleurs, who were actors and musicians of a professional nature, and who played accompaniments on divers instruments to the minstrels' songs, with interludes of acting, mimicry, juggling, etc. These pipers, when tired of their roving life, often settled down in towns and formed guilds or town bands, especially in Germany and the Netherlands. To the southeastern part of France belongs the honor of being the pioneer to the romantic song movement. There are frescoes and pictures extant depicting some of these medieval bands; a bas-relief of the eleventh century, from a church in Normandy, shows an early orchestra, composed of two rottas or crwths, an organistrum, a syrinx, a psaltery, two harps, and instruments of percussion. We know, from the Manesse manuscripts at Paris, that Frauenlob, the last of the minnesingers, who flourished in the thirteenth century, was also an instrumentalist. He is shown in an illustration, seated on a high platform, conducting a little band of stringed and wind instruments. All these instrumentalists are at rest except the chief musician, who is evidently a great master, performing on a four-stringed fiddle; all are listening with rapt attention, and he is standing on a special carpet just unrolled by

two boys. Some sort of conducting was evidently practised, even in those days, for Frauenlob is depicted with a long stick in the left hand, and his right held up, to command attention. At the end of the Middle Ages it was customary to conduct by beating a stick on the floor; in fact, Lulli met his death through accidentally pounding his foot with the conducting-stick. Probably Frauenlob's stick was for use in rapping out the time. In a Spanish manuscript of the thirteenth century, in the Escorial Library, is a series of miniatures representing fifty-one musicians of the period, playing various instruments. Albrecht Dürer has left us many pictures on musical subjects—notably one of the Nuremberg town band, in the town hall of that city, consisting chiefly of wind instruments. The two slide-trombones resemble the modern ones as nearly as possible.

Mysteries, Miracle Plays, etc.—The mysteries and miracle plays were sacred dramas performed at first by monks in churches, and when afterward, with an admixture of secular element, they developed into moralities, interludes, and, later still, into plays, dramas, and masques, they were performed in the streets, in the courtyards of inns, in tents, and finally in the theaters, the first in England being that built by Burbage in Shoreditch (1576-77). All these plays were interspersed with short preludes of descriptive music. Appropriate instruments were used to attune the mind of the spectator to receive certain impressions. These early dramatic productions were preparing the way for the opera during the thirteenth, fourteenth, and fifteenth centuries. In England the transition from the masques, set to music by Lawes and

Purcell, seemed but a step, and took place quite naturally and easily during the lifetime of Purcell, but the idea and name of opera were borrowed from Italy. In France the masques were called ballets, and continued side by side with the opera.

Revival of the Drama.—It is to Florence that the honor is due, not only for the renaissance in painting, but also in music, at the end of the sixteenth century. In striving to bring back the glories of the old Greek tragedy, incomplete without its music, which was lost, a small number of Tuscan art-enthusiasts came upon the idea of the modern opera at a time when the rest of Italy, Germany, and France were devoting their musical talent to the composition of elaborate Church music. One of the enthusiasts, Galilei, perceived that the expressive solo song was essential to the drama, and he composed, in 1580, a dramatic scena or cantata called "Il Conte Ugolino," for one voice, with accompaniment on the viol. This was a complete success, and was followed in 1594 and 1600 by the two earliest operas, "Dafne" and "Euridice," by Jacopo Peri. In the latter we find the idea of the dramatic recitative on an instrumental bass. Peri's orchestra consisted of a cembalo, a chitarrone, a theorbo, and a large lyra or guitar-fiddle. Larger orchestras than this were usual in Italy, for in 1565 intermezzi, little *entr'acte* scenes of instrumental music, song, recitative, and dialogue introduced between the acts of the spoken drama, and also the "Symphoniæ Sacræ" of the two Gabrielis, were scored for no less than twenty-one different kinds of instruments. It seemed as if Italy had been waiting for the opera, for it found favor at once, and Peri's impetus produced writers of operas, in an in-

credibly short time, in all parts of that musical country.

Our Orchestra.—We owe the composition of our orchestra to Monteverde, of Cremona, who was the first to see that the best balance is obtained by having a preponderance of stringed instruments. His orchestra in 1608, when his opera "Orfeo" was produced, consisted of two gravi cembali, two violins, ten viols, one double harp, two chitarroni, two positives, one regal, three viols da gamba and two double basses, four trombones, two cornets, one small octave flute, one soprano trumpet, and three muted trumpets—in all twenty strings, against eleven wind instruments and three keyed. Monteverde anticipated Wagner's principle that the exigencies of the action and the requirements of the texts should rule the musical design of the lyrical drama, and the instrumental portions should, quite as much as those assigned to voices, illustrate the progress of the scene and the significance of words. The latter is exemplified by Monteverde's use of particular instruments for the music of particular persons, so as to characterize every member individually. In his opera of "Tancredi e Clorinda" Monteverde depicts in the orchestra the feelings which the voice is not able to express alone. Making a great advance in the use of bowed instruments, he invented the tremolo on strings to thrill the audience when Tancredi mortally wounds Clorinda by mistake. He also invented the pizzicato to imitate the clashing and drawing of swords.

Old Instruments.—Many of the instruments used by Monteverde are now obsolete. The regal was a tiny portable organ, the positive being larger and stationary. The chitarrone was a large lute. The viols were the

predecessors of the violin family, our present double bass (violone) being a survivor of the viol type. The viols were flatter than the violins, their tones being quieter and sweeter, if less brilliant. The smallest was the treble, or descant, viol. Then came the tenor (viola da braccio). The bass (viola da gamba) corresponded to our violoncello. The latter name, meaning "little violone," is incorrect, because the cello is not of the viol type. The Italian guitar-fiddle, or lyra, led to the violin. Gasparo da Salo is acknowledged as the first violin-maker, though some claim the invention for the Tyrolean Tieffenbrücker. The Amati family, Stradivarius, and the Guarneri brought violin-making to a perfection that it has never reached in later days. By the time of Alessandro Scarlatti the violins had almost wholly replaced the viols.

Instrumental Church Music.—For centuries the Church had been content with rich polyphonic choruses in many parts, with the accompaniment of organ, viols, trumpets, trombones, or cornets, or with viols alone; but the love of color of the Venetian masters in music, no less than in painting, led them to introduce into Church music two, or sometimes even three, complete choirs, with rich (for that time) orchestral accompaniment. The founder of the Venetian school was Willaert, a Dutchman, who had studied in Paris, and his pupils, the two Gabrielis (1510 to 1613), wrote innumerable "Symphoniæ Sacræ" for voices and instruments.

Growth of Instrumental Music.—With the musical drama grew the individualism of the various instruments. The violin family in particular received great attention. The beautiful instruments turned out by

the Cremona makers encouraged virtuosi to try their skill to the utmost, and composers to write solos to show off the capabilities of the instruments. The first to write a solo for the violin was Biagio Marini, who died at Padua in 1660. Till then, if an executant on a viol wished to play alone, he chose the treble part of a madrigal or part-song. Marini had a host of followers who imitated him. We find the variation form invented by Vitali, and the concerto, in its elementary form, by Corelli (1653-1713). During the second half of the seventeenth century the overture was also invented by Lulli, a Florentine brought up in Paris. A scullion at first, he showed great musical ability, and soon became a leader in the art. Though nominally writing in the ballet form, he brought operatic music in France to a high plane, and stood as a model for Purcell. Lulli made many improvements in the orchestra, including the introduction of the kettledrum.

In Monteverde's days only a little prelude of eight or nine bars repeated preceded the opera. "Lulli's overture," or the French (1672-86), was composed of two movements, the first slow and majestic, the second rapid, and it had no connection with the action of the opera to which it was prefixed. The Scarlatti or Italian overture consisted of an allegro, a short adagio, and a second quick movement or a repetition of the first. Handel wrote his overtures on Lulli's form, much elaborated. Gluck was the first to write overtures analogous in style and sentiment to the opera which followed, but even he did not include in his overture themes from the opera; this improvement was carried out by Mozart in his "Don Giovanni." Beethoven attained to the highest pinnacle of dramatic art

and of elevation of style in his overtures, notably that to "Egmont" and "Leonore" No. 3. Weber invested the overture with the richest local color and romanticism, and Wagner with the grandest and most splendid orchestration.

At the end of the sixteenth century the word sonata began to be used by the two Gabrielis in Venice, for organ compositions. It seems to have been applied to a portion of a larger work of which the rest was vocal. The sonata was brief, solemn, slow, pouring forth volumes of sound. The word was similarly applied in Germany (probably through Heinrich Schütz, a pupil of Giovanni Gabrieli's, who composed the first German opera, in 1627, to the text of "Dafne"). In the seventeenth century, when instrumental and solo music began to develop, the sonata assumed a certain definite form under Bibers and Corelli, who wrote for the violin. It consisted then of four or five movements more or less like a "suite de pièces," and kept this form under Domenico Scarlatti and Bach. Kuhnau was the first to write sonatas for the harpsichord. Haydn, by introducing two contrasted chief themes, in properly related keys, followed by a closing theme, perfected the sonata form. Mozart followed in his footsteps. It was Beethoven, however, who gave us the perfect sonata as it now stands, with four movements, of which the first at least is in the sonata form. The symphony, a sonata for orchestra, the concerto, the chamber quartet and trio, etc., all are built on this grand plan of the sonata. The first to perfect the symphony was Haydn; Mozart used it fluently, but Beethoven, with bold regenerating touch, gave it what it required to make it a great art-form.

The Modern Orchestra.—Our orchestra practically began to assume a definite shape, and to have an independent existence, as well as music and laws of its own, with the revival of the drama in the seventeenth century. As the instruments were improved, new ones introduced, and old ones abandoned, instrumentation became a new and favorite study in Italy. Musicians began to find out the capabilities of various families of instruments, their value in special effects, the kind of music most suitable to each, and also to feel their way about the immense field of resources opened out to them. The possibility of using some of the instruments as solo instruments, by encouraging virtuosi to acquire great skill, raised the standard of excellence of the whole orchestra. Monteverde had felt the need of the preponderance of stringed instruments in the orchestra, and his successors, who had the perfected Cremona models at their disposal, soon established a properly balanced quartet of strings, and ejected all stringed instruments not played with the bow, except the harp. The proper understanding of the compass and capabilities of wind instruments was of later date. They were chiefly used to double some part of the string quartet at first.

The effort of reviving the drama and of creating instrumental music seems to have exhausted Italy, for during the eighteenth century the orchestra occupied a very secondary position in Italian music. The evolution and perfecting of the orchestra was continued chiefly in Germany during that period.

In the scores of Lulli we find almost all the numbers given to the stringed instruments; but there are also certain selections for wind instruments (oboes

and bassoon, flutes). It was then held that the instruments starting a selection should finish it, and no other kind should join. If this rule was disregarded, the result was called "broken music." The existence of this term may imply that the rule was not strictly kept, but "broken music" was generally considered incorrect. In France, it was not until the advent of Rameau that the wood-wind was used in free parts to enrich the harmony of the strings. But Germany had a world-genius in Johann Sebastian Bach, who used instruments with the independence of real greatness. The strings predominate in his music, but it demands many other instruments, and shows a wealth of tone-color. Among the instruments that he used are, besides the strings now employed, a violino piccolo, a minor third above our violin; the viola d'amore, a tenor viol with seven catgut strings and seven steel strings for sympathetic vibration; the viola da gamba; the lute; and the violoncello piccolo, a small-sized cello. The wind instruments include both the traverse and the straight (beak) flute; the piccolo; the oboe d'amore, a minor third below our oboe, and the oboe da caccia, a fifth below ours; the bassoon; the cornetto, a wooden trumpet, known in a deeper form as the serpent; horns, trumpets, and trombones in four sizes, soprano, alto, tenor, and bass; a slide-horn, a slide-trumpet, and a curved trumpet called the lituus; also there were kettledrums. Many of Bach's works demand organ accompaniment. His great contemporary, Handel, preferred the harpsichord to the organ. Handel disregarded the old oboes, cornetto, small violin, and small cello, and used the viola da gamba only rarely. He included in his forces two large lutes

(arciliuto and theorbo) and the harp. He experimented with the chalameau, the predecessor of the clarinet; and he used our present oboe very freely. Haydn, the "father of the modern orchestra," banished many of the older instruments. His orchestra consisted of first and second violins, violas, violoncellos, double basses, flutes, oboes, bassoons, horns, trumpets, and kettledrums. Mozart added the clarinet, and Beethoven the trombone. This is what is known as the classical orchestra, and Brahms has shown that the greatest modern music may still be written for these forces.

It is not only the number of different instruments, but the manner in which they are used, that gives a composer's work its special style. With Bach, they are almost always employed contrapuntally, weaving an orchestral texture of melody. Handel was more modern in style, full of dramatic effects, experiments, and direct power of melody. Haydn was clean-cut in style, and a pioneer in the study of tone-color. The classical orchestra consisted of three main divisions, strings, wood-wind, and brass; and the great symphonists exploited the tone-color of groups as well as of single instruments and their combinations. Beethoven was a consummate master of tone-color, and his development of the latent possibilities in the different instruments has gained for him the title of "liberator of the orchestra." Schubert wrote fluently, and emphasized the wood-wind, but came to feel that his lack of contrapuntal knowledge was a handicap. Weber made the tone-color of horns and clarinets seem very effective. Mendelssohn excelled in delicate effects, like those of the "Midsummer Night's Dream"

music; but the lonely, brooding spirit of his "Scotch" symphony and his "Hebrides" overture helped to earn him the title of "le grand paysagiste." Schumann was better at composition than at instrumentation, but now and then he gives a graphic touch, like the transition from the slow movement to the scherzo in his first symphony. Tchaikovsky obtained new and wonderful wood-wind effects. But the great master of modern instrumentation was Wagner, whose glowing masses of tone seemed a revelation of orchestral beauty. He obtained his results partly from the new instruments of his time (English horn, tubas, etc.), but chiefly by the device of dividing the forces of each instrument, thus giving a chord instead of a note to each one of several different kinds of instrument. This produces an extremely rich and pleasing tone, and this procedure is much used in modern orchestration. Before Wagner, Gluck had been the chief apostle of realism in operatic music, and he introduced into his operas many clever effects of tone-color—the anger of the Furies at Orpheus, the barking of Cerberus, etc. Schumann was responsible for the introduction of valved horns and trumpets, of which the former have become invaluable in modern music. At present Richard Strauss is the leader in orchestration, going even beyond Wagner in intricacy, even if his music does not usually equal Wagner's in charm and attractiveness.

The art of conducting an orchestra, upon which so much depends nowadays, is of comparatively recent date. Concerts and operas used to be directed by a musician seated at the piano (earlier still at the harpsichord or spinet), who followed from the score, oc-

casionally joining in on the piano, while the first violin or leader gave the tempi, or beat time, with his bow, if the instrumentalists faltered or failed to keep strictly together. The baton was used in Germany very soon after 1800. Godfrey Weber pleaded for its introduction in 1807, but musicians scoffed at the idea. Mosel brought it to Vienna in 1812. Karl Maria von Weber used it in Dresden in 1817. In 1820, at a Philharmonic concert in London, Spohr electrified his audience by forsaking his piano and standing with his face toward the orchestra and his score in front of him on a desk, beating time with his baton from beginning to end of the concert. This was found so successful a method that it was at once adopted in England.

The final seal was placed upon the modern orchestra by the invention, about 1815, of the piston or valve system for brass-wind instruments, by Stözel and Blümel, both natives of Silesia. Ingenuity had been at work in all directions to provide a new and satisfactory bass for the wind contingent. The ophicleide or keyed serpent and the various other allied keyed brass instruments comprised under the general but misleading term of "bass horns" were tolerated for want of better. The results of the invention were instantaneous and far-reaching, and instrument-makers of all countries vied with each other in making use of this invaluable contrivance and in bringing it to mechanical perfection. Before long the orchestra was enriched by the family of brass valve instruments of large caliber known as tubas or bombardons and euphoniums, having throughout their compass a chromatic scale and a full sonorous tone of great beauty and power, and providing needful bass for the orchestra and military band.

For summing up and presenting a concise description of the modern orchestra as now usually constituted and disposed, we are permitted to make use of the following extract from an article in that excellent work "The Musical Guide":

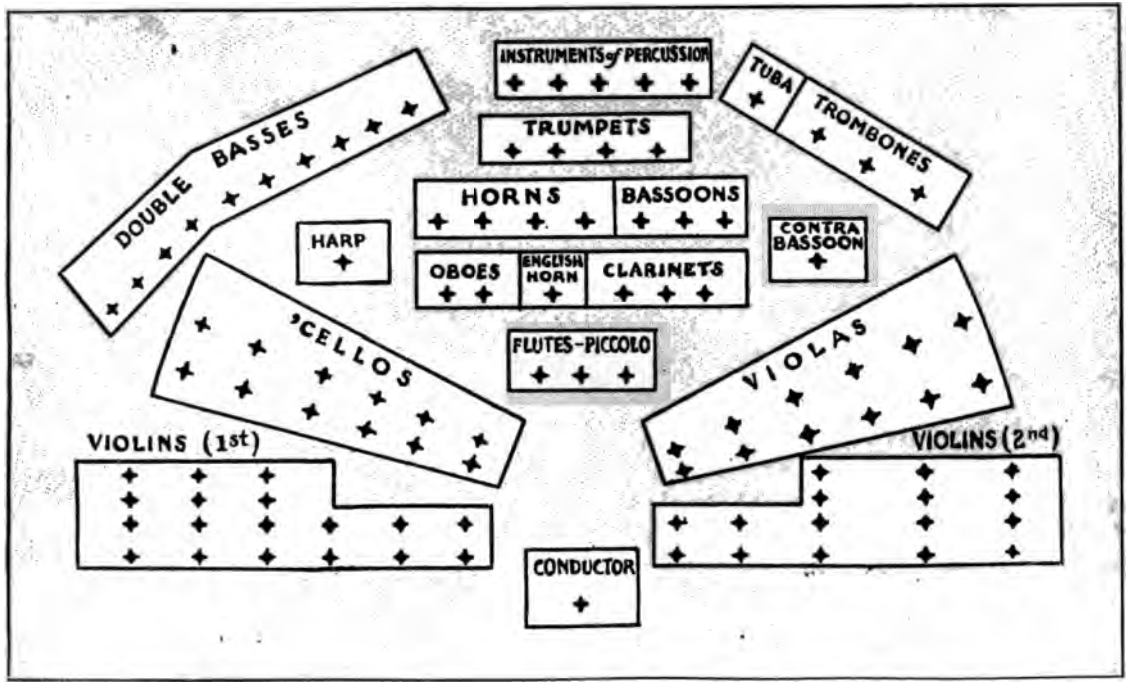
"The orchestra as now constituted is practically that of Beethoven. As ordinarily distributed it is composed of a piccolo, 2 flutes, 2 oboes, 2 clarinets, 2 bassoons, 4 horns, 2 trumpets, 3 trombones, 2 kettledrums, first and second violins, violas, cellos, and basses. The wood-wind instruments are now frequently used in triplets instead of pairs, and the whole wind choir is extended at will by the use of the English horn, the bass clarinet, the tuba, the saxophone, or other less common instruments. The harp is also employed at times.

"Orchestration, the art of writing for orchestra, has developed rapidly in recent years, yet the fundamental principles are those which guided Mozart and Beethoven. The modern efforts have been in the direction of increased sonority and richness of color. These ends are obtained by writing for a larger number of instruments and by dividing the old ones into a greater number of parts. The orchestra naturally separates itself into three groups of melodic instruments and one of merely rhythmic ones. The first three groups are the wood-wind, the brass, and the strings, and the other is the 'battery,' as the group of percussive instruments is called. In this last group only the kettledrums have musical pitch, except when bells are employed.

"The wood-wind is divided into flutes, which have no reed mouthpieces; oboes and bassoons, which have

mouthpieces with two vibrating reeds; and clarinets, which have mouthpieces with one reed. Flutes used in triplets are capable of independent harmony, but all of a high pitch. Bassoons are the basses of the oboe family, and hence with two oboes and two bassoons composers can write in full four-part harmony for this class of reed instruments, and let them play by themselves when their peculiar thin, reedy quality is desired. The English horn, the alto of the oboe, can be used as another part. Clarinets have a compass extending through the alto and soprano ranges of the human voice, while the bass clarinet covers the tenor and the bass. Here again the composer can get a full harmony in one family of wood. Thus the wood alone offers three distinct orchestral tints. But the instruments of the different families combine to make new tints. Flutes go well with clarinets or oboes, and clarinets combine admirably with bassoons. Furthermore, the whole wood-band can be used at once with fine effect. The older composers had conventional methods of writing for these instruments, almost always allotting the same parts of the harmony to the same instruments. The moderns have learned to vary this practice with excellent results. All the wood-wind instruments can be used profitably as solo voices.

"The brass offers three groups, horns, trumpets, and trombones, each of which is capable of independent harmony, while each may be combined with the other, or with any part of another, to make variety of effects. All are useful for solo effects, the horn being especially good for this purpose. The brass can also be used in many combinations with the wood-wind. Horns, clarinets, and bassoons, for example, are fre-



HOW THE ORCHESTRA IS ARRANGED

quently combined. The foundation of the orchestra, however, is the string quartet, as it is called, though it is really a quintet. Violins supply the soprano and alto parts of the harmony, violas part of the alto and all of the tenor; cellos run from bass up to low soprano, and basses give the deepest notes. . . . The moderns subdivide the strings very often, writing at times for first and second violins in as many as six parts, for violas in two parts, and cellos in the same way. In this way the harmony becomes many-voiced and extremely rich."

The following table contains a comparative list of the principal instruments employed in recent years in some of the leading orchestras of the world:

	Gewandhaus, Leipzig	Philharmonic, Vienna	Philharmonic, London	Philharmonic, New York	Boston Symphony, Boston	Conservatoire, Paris	Crystal Palace, London	Bayreuth Festival (1876)	N.Y.Festival.Theo. Thomas (1882)	Handel Festival, London (1880)
Flutes	2	2	2	3	3	4	2	3	6	8
Piccolos	—	1	1	1	1	1	1	1	2	6
Oboes	2	2	2	3	3	2	2	3	7	8
English horns	1	1	1	1	1	—	1	1	2	—
Clarinets	2	2	2	3	3	2	2	3	6	8
Bassoons	2	2	2	3	3	4	2	3	6	8
Double bassoons	1	1	1	1	2	1	1	1	2	2
Horns	4	4	4	4	8	4	4	8	11	12
Trumpets	2	4	4	3	4	2	2	3	14	6
Trombones and tubas	4	4	4	4	4	4	4	9	12	12
Harps	1	2	1	1	1	1	1	6	6	—
Violins (First)	14	20	14	20	16	15	14	16	50	92
Violins (Second)	14	20	12	16	14	14	14	16	50	85
Violas	9	6	10	14	10	10	10	12	36	57
Celli	12	12	10	14	10	12	10	12	36	58
Basses	6	10	8	14	8	9	10	8	40	48
Bass clarinet	1	—	—	—	1	—	—	—	—	—

FIRST SECTION

WIND INSTRUMENTS

I. CLASSIFICATION

THE instruments of the orchestra may be divided into three sections:

STRINGS WIND PERCUSSION

It has been thought best to begin by describing wind instruments, for the reason that they are less generally understood than are those comprised within the term "strings."

WOOD-WIND

(*a*) *Without Reeds:* The Flute, the Piccolo.

(*b*) *With Double Reeds:*
The Oboe, Cor Anglais, Bassoon, Double Bassoon, or Contrabassoon, also the Heckelphone, or Barytone Oboe.

(*c*) *With Single Reeds:*
Clarinet, Basset Horn (Tenor Clarinet), Bass Clarinet, Pedal Clarinet, Saxophone (classed with the clarinet, although made of metal, on account of the single-reed mouthpiece).

NOTE.—In the "History of Music" in this series, together with the historical accounts in the following pages, primitive and ancient instruments are sufficiently described.

BRASS-WIND

(*a*) *With funnel-shaped mouthpiece:*
French Horn, Wagner Tubas.
(*b*) *With cup-shaped mouthpiece:*
Trombone, Trumpet, Tubas, Saxhorns, Ophicleide, Doublophone, Cornet.

Wind instruments were used before and during Bach and Handel's time almost exclusively to double the value of the strings in unison; their independent use in orchestras dates from the beginning of the eighteenth century. The position of wind instruments has gained, and is still gaining enormously in importance; there have been more deviations from the old accepted paths of instrumentation with regard to wind instruments than to any other. Berlioz and Wagner treated them in a specially novel and revolutionary way, calling forth much adverse criticism and hostility. This large class of instruments is divided and subdivided many times, and it may help amateurs in recognizing and remembering their characteristics to mention a few of their chief differences.

The Wood-Wind, besides being classed as above, according to their mouthpieces, may be further divided thus:

(*a*) Instruments with conical bore, such as the oboe family and the saxophone (in brass-wind, the French horn, the tubas, ophicleide).

(*b*) Instruments with cylindrical bore, such as the clarinet family, the flute (in brass-wind, the trombone, trumpet, cornet).

The Brass-Wind, besides being classed as above ac-

cording to their mouthpieces, may be further divided thus:

(*a*) Tubes of fixed length, ex.: natural trumpet, natural French horn.

(*b*) Tubes whose length is varied by means of a slide, ex.: slide-trumpet, slide-trombone.

(*c*) Tubes whose length is varied by means of lateral holes, ex.: keyed bugle, ophicleide.

(*d*) Tubes whose length is varied by means of valves, ex.: cornet, tubas, French horns.

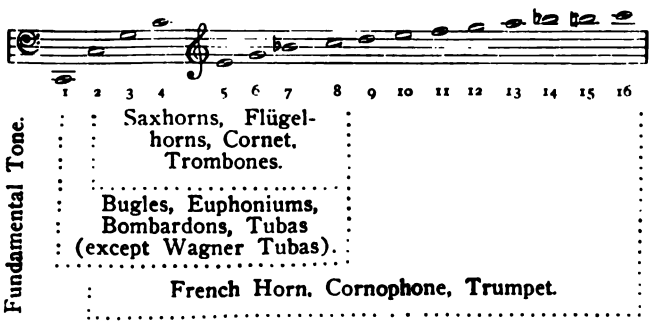
The Brass-Wind may again be subdivided in the following manner according to the harmonics given out by the tubes:

(*aa*) Those which give out all the harmonics up to the 16th, such as the French horn and the trumpet.

(*bb*) Those which give out harmonics from the 2d to the 8th without the fundamental tone, such as the cornet.

(*cc*) Those which give out the fundamental tone and the harmonics up to the 8th, such as the euphonium, trombone, and tubas.

HARMONIC SERIES



II. WOOD-WIND

THE FLUTE IN C (ALSO CALLED IN D)

(*Transverse Flute*)

French, Flûte (traversière).
German, Flöte (Querflöte).
Italian, Flauto (traverso).

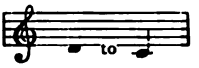
THE flute belongs to the class of wood-wind instruments without reeds.

Construction.—The flute consists of a tube open at the lower end and nominally closed at the upper, beyond the embouchure or mouth-hole, by means of a conical cork stop. In flutes made after Boehm's system the tube has now, instead of the old conical bore, a cylindrical one, terminating in a head with a parabolic curve. This tube consists of three joints:

1. The head, plugged at the upper end and containing, at about the third of its length, the orifice called embouchure, across which the performer directs the breath obliquely with the lips without closing it.

2. The body, containing the holes and keys necessary to produce the scale which gave the flute its old designation of D flute. The head and body together should theoretically give the fundamental note D, the six finger-holes being closed, and this is actually the case in the piccolo which is built without the foot; but mechanical exigencies connected with the addition of this joint render it impossible to preserve the original length of the body, so that the D is now produced through the second open key in the foot instead of being given out by the end of the tube formed by body and head together.

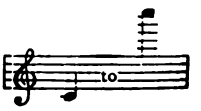
3. The foot, containing the additional keys necessary for extending the compass from



Flutes are made of various materials, wood (cocus), silver, gold and ebonite. The cone flute with open finger-holes has now been mainly superseded by flutes constructed on the Boehm system.

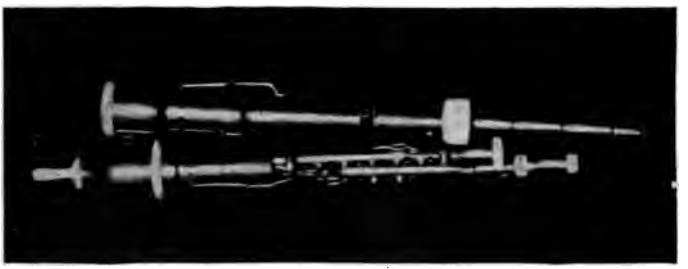
Production of Sound.—The flute is held transversely, with the embouchure turned slightly outward, so that the player's breath strikes the sharp outer edge of the orifice, setting up a flutter which reacts upon the stationary column of air within the flute, thus generating the sound-waves. There are sufficient holes and keys on the flute to produce all the chromatic semitones of the first octave. The next two octaves are obtained through the same holes by overblowing, i.e., by increased breath-pressure and a change in the position of the lips whereby the notes of the fundamental octave are reproduced an octave, a twelfth, or a double octave higher, aided by various devices for facilitating the production of these harmonic overtones.

Compass.—The compass of the newest C flutes is three octaves, with chromatic semitones from



The treble clef is used in notation.

The flute is a non-transposing instrument, the music being played as written.



FLUTE: Italian. Length, 18½ in.

TRIPLE FLAGEOLET: Italian. Length, 20⅛ in.

AULOI: Ancient Greek

Quality of Tone.—The peculiar timbre of the flute is characterized by a slight hollowness which may be accounted for by the paucity of upper partials present in the clang, for which, it is thought, the construction and proportions of the interior of the head may be responsible. The tone differs greatly in the three registers of the flute; the lowest being sonorous; the medium, sweet and elegiac; the highest, birdlike and brilliant.

Possibilities.—It is possible to play on the flute sustained notes, diminuendo and crescendo; diatonic and chromatic scales and arpeggios, both legato and staccato; leaps, turns, trills, etc. By the articulation with the tongue of the syllables "te-ke" or "ti-ke" quickly repeated, for groups of two or four notes, and of "te-ke-ti" for triplets, an easy, quick staccato, useful in accompaniments, is produced. This is called double or triple tonguing. Two or three flutes are used in large orchestras in harmony or unison, and one of the flute-players takes the piccolo when necessary.

Origin.—The flute is one of the most ancient instruments. The Egyptians had a long flute, held transversely, and of such length that the player's arms were stretched out to their full extent downward. This flute, known as the nay, was used without embouchure by blowing across the open end of the pipe. Eight persons are represented playing these nays on a tomb at Gizeh. Double pipes are seen repeatedly on their monuments; they were played with reed mouthpieces and were therefore oboes or clarinets, not flutes.

The Greek aulos and the Roman tibia were also pipes played by means of a double or a single reed mouthpiece and were therefore prototypes of the oboe

or clarinet, and not flutes. The Etruscans, before the Romans, used the aulos as their chief instrument, both in its single and double form, and it is represented in mural decorations and on their beautiful vases. It is doubtful whether the Greeks used the flute proper, as did the Egyptians. We do not know exactly how the flute passed from the older civilizations to the newer in Europe; it was probably made known by the Moors or the crusaders. During the Middle Ages the flute seems to have been more fully developed in Germany than elsewhere. It existed in two forms: the direct or vertical like the recorder and the flageolet, instruments which are no longer in use in orchestras, and the German or transverse flute, which superseded the other form.

Bach gave the flute great prominence in obbligato and concerted passages, and since then it has been a favorite with all the great masters. Beethoven and Mendelssohn assigned to it the leading part for wind instruments. The flute generally plays with the violin, sustains notes with other wind instruments, or carries on conversations with the oboe and clarinet families, as in the grand symphony in C major by Schubert.

The most voluminous writer for the flute was probably Quantz, who composed 200 solos and 300 concertos for Frederick the Great alone. In Kuhlau the flute found its special exponent. This eminent contrapuntist devoted nearly the whole of his short professional life to compositions for this instrument

III. WOOD-WIND.

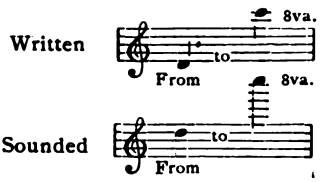
THE PICCOLO OR OCTAVE FLUTE

French, Petite Flûte Octave. *German,* Pickelflöte.
Italian, Flauto Piccolo, or Ottavino.

THE piccolo, which belongs to the wood-wind class of instruments without reeds, is really only a flute on a small scale, having half the dimensions of the large concert flute. Its principle of construction is the same, and so is the method of producing the sound.

Compass.—It is called octave flute because its compass lies an octave higher than that of the concert flute, and the music for it is written an octave lower than the real sounds to avoid using so many leger lines. The piccolo does not contain the additional tail-piece with the extra low keys which extend the compass of the flute.

Compass.—The compass extends, with all chromatic intervals:



Quality of Tone.—The notes at both extremes are not much used; the lower, because their tone is weak and ineffective, the upper, because of their extreme shrillness, and of the difficulty of playing them anything but fortissimo.

This instrument, except for a few harmonics on

the violin, is the acutest in pitch in the orchestra. The medium register is the most used; its tone is clear and sharp. The piccolo has been found of the greatest value in imitative music, to depict the whistling of the wind in storms, as in Beethoven's "Pastoral" symphony, Wagner's "Flying Dutchman," and in conjunction with the violins in tremolo to depict the rustling of leaves in the breeze, as in the beautiful "Waldweben" in "Siegfried" and "Götterdämmerung." Verdi, in his "Falstaff," has shown that it can become a powerful comic agent, helping to reflect in the orchestral music the humorous situations of the drama. It is always used in bacchanalian music, and in any scenes of wild and frenzied gaiety. Berlioz had a great penchant for the piccolo. An exhaustive description of it may be found in his "Treatise on Instrumentation."

The piccolo is used singly in orchestras, and is generally played by one of the flautists.

IV. WOOD-WIND

THE OBOE
(The Shawm)

French, Hautbois. *German,* Hoboe. *Italian,* Oboe.

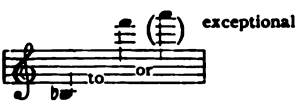
THE oboe is an elaborate and complicated instrument of the double-reed wood-wind class.

Construction.—It is composed of a wooden tube with conical bore, widening out to form a small bell, and having at the opposite end a short metal tube, to which are bound by silk the two thin pieces of cane forming the mouthpiece. Into this the player breathes gently. As he is obliged to loosen the lips from the mouth-

piece to breathe out the superfluous air, he cannot execute very long passages without pauses.

Production of Sound.—The notes are produced by holes, some open, others closed by keys raised by means of levers. The newest models possess three or four alternative fingerings for certain awkward notes, which reduces the difficulty in fingering inconvenient passages. It is to Barret we owe the greatest improvements in this instrument. The oboe, like the flute, is an octave instrument, that is to say it overblows the octave. The oboe possesses notes sufficient for an octave or more with chromatic intervals. The next octaves are obtained by means of cross fingering and of the octave keys, which do not give out an independent note of their own, but determine a node in the column of air, and so raise the pitch of any other note played an octave.

Compass.—The compass of the oboe is from



The treble clef is used in notation.

The oboe is a non-transposing instrument which sounds the real notes written.

Quality of Tone.—If the reader wishes to distinguish the oboe speaking in the orchestra, let him bear in mind the quality of the bagpipe or musette; that will assist him in hearing the oboe. The quality of the tone is very penetrating (it can be distinctly singled out in a full orchestra playing forte) and rather shrill in the upper register, the lower being sweeter and more

like that of the cor anglais, though thin. The quality does not otherwise vary much in the different registers. On account of this want of variety in tone and color, it is not a favorite solo instrument. In the orchestra, it is invaluable as a melody-leading instrument, balanced by clarinets and flutes. It is especially suitable for pastoral music, or the expression of sadness.

Possibilities.—It is possible to play on this instrument diatonic and chromatic scale and arpeggio passages, legato and staccato; leaps (staccato only); cantabile passages, sustained notes, diminuendo and crescendo; grace notes and trills (with reservations). Keys with many flats are the most difficult for the oboe-player. As the oboe-player gives forth his breath very slowly, long passages on the instrument are very exhausting.

Origin.—The oboe is of very ancient origin; it is derived from the instruments called, at various times, shawm, shalm, shalmey, chalumeau (from the Latin *calamus,* a pipe), with the bombard and pommer as tenor and bass. The descant shawm became the oboe, the transformation taking place during the seventeenth century in France. The archetype of the oboe has been found depicted in sculpture and painting in Egypt and Greece, and specimens have been discovered in tombs and mummy-cases with straws or reeds by their side, which were evidently intended for mouthpieces. The Greek aulos and Roman tibia were prototypes of the oboe.

There are generally two or three oboes in an orchestra, and they play either in parts or in unison. Oboes were first used in military bands before being used in churches or for secular music, and their name,

hautbois, indicates that they were the trebles of the wood-wind. The oboe assumed its present shape early in the seventeenth century.

V. WOOD-WIND

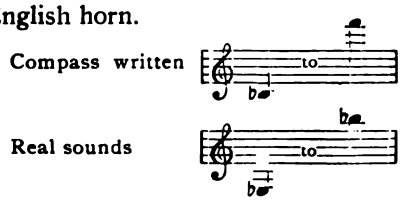
COR ANGLAIS OR ENGLISH HORN

German, Englisches Horn. *Italian,* Corno Inglese.

THIS instrument, which is better known by its French than by its English name, is not a horn, but a double-reed wood-wind instrument of the oboe family, of which it is the tenor; it bears the same relation to the oboe as the basset horn does to the clarinet.

Construction.—The cor anglais differs slightly from the oboe, in that it is longer by half, has a larger globular bell, and the wooden tube with conical bore is furnished with a bent crook, holding the mouthpiece. The fingering and the method of producing the sound are so similar to those of the oboe that the player of the one can in a short time master the other.

Compass.—The compass and clef are the same as for the oboe, but the cor anglais is pitched a fifth lower, being tuned to F. It is a transposing instrument, the music for it being written in a key a fifth higher than that of the composition. For example: a piece in A major would have to be written in E major for the English horn.



The treble clef is used in notation.

Quality of Tone.—The tone of the cor anglais is of the same penetrating quality as that of the oboe; the pitch is lower, but the tone sweeter and more masculine and melancholy, and often sounds like a wail. If the reader will bear in mind the quality of tone of a deep musette, it will assist him in distinguishing the English horn in the orchestra. This instrument, on account of its peculiar sweetness, is very suitable for pastoral music, and for expressing longing and tenderness, regrets or sweet memories, as in "Tristan und Isolde," in which opera it is extensively used. Wagner, however, not entirely satisfied with the cor anglais for representing the natural pipe of the peasant, caused an instrument to be made specially for him, which he called "Holztrompete," or wooden trumpet. This instrument resembles the cor anglais in form, being a wooden conical tube with a small globular bell. It differs, however, in that it has neither holes nor keys, only one piston placed at a third of the distance between the mouthpiece and bell. It is played through a cup-shaped mouthpiece by overblowing, that is to say, that by the varied tension of the lips, and pressure of breath, the upper partials from the 4th to the 12th are produced. This instrument is in C, and is non-transposing.

Possibilities.—It is possible to play the same kind of music on the cor anglais as on the oboe, but the peculiar timbre of the instrument renders florid music quite unsuitable to it. Keys with many sharps or flats are the most difficult for the English horn.

Origin.—Cor anglais is a misnomer, for it is not a horn. It may have been derived from the old English shepherd's horn, which was a similar but more primitive instrument, made of wood. This instrument was

sometimes found bent at an obtuse angle in the middle of the tube. The instrument is always made straight now. Like the oboe, it is a very ancient instrument, developed from the shawm through the family of pommers, of which the alto was the immediate forerunner of the cor anglais. The exact date at which the cor anglais assumed its present form is unknown; it was presumably in the seventeenth century, at the same time as the oboe.

Gluck was the first to introduce it into the orchestra in his opera "Alceste" in 1767, unless Bach's "oboe da caccia" can be identified as the cor anglais. This instrument was ignored entirely by Beethoven,* Mozart, and Weber, but modern composers, Berlioz, Meyerbeer, Rossini, and especially Wagner, have fully appreciated its value.

VI. WOOD-WIND

THE BASSOON

French, Basson. *German,* Fagott. *Italian,* Fagotto.

THE bassoon belongs, like the oboe, of which it is the bass, to the class of wood-wind instruments with a double-reed mouthpiece.

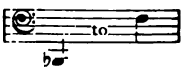
Construction.—The bassoon resembles a bundle of sticks; hence its name in German and Italian; where-

* Beethoven's trio for cor anglais and two oboes was probably intended for oboe d'amore, or oboe da caccia. The oboe d'amore, which is an oboe of deeper pitch, has been prominently used by Richard Strauss in his "Sinfonia Domestica," and the Heckelphone, which is a barytone oboe (an octave deeper than the oboe), has been employed by the same composer in his "Salome."

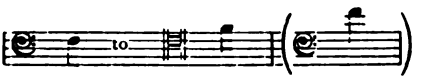
as the French and English names refer to its pitch, which is an octave lower than that of the oboe. It consists of five pieces, which, when fitted together, form a wooden tube about seven feet long, with a conical bore. This tube is doubled back upon itself, the shorter joint reaching to about two-thirds of the longer, which reduces the height of the instrument to about four feet. The five pieces are the bell, and the long joint forming the upper part of the instrument when played (though its notes are the lowest in pitch), the wing overlapping the long joint, to which is attached the crook, a narrow metal tube, curved, and about twelve inches long, to which is attached the double reed forming the mouthpiece; lastly, there is the butt, which is the lower end of the instrument (when it is being played). This butt-joint contains the double bore necessitated by the abrupt bend of the tube upon itself: both bores are pierced in one block of wood.

Production of Sound.—The instrument is held in a diagonal position by the player, the lower part of the tube, played by the right hand, resting against his right leg and the little bell turned upward in front of his left shoulder. The notes are produced by holes and keys similar to those of the oboe. The mechanism and the fingering of the bassoon are very intricate.

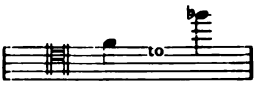
From B flat to F



These notes are produced by means of the keys only; the next octave from



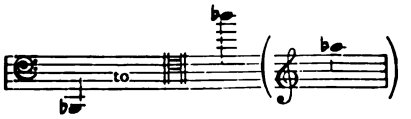
is obtained by overblowing the notes of the previous octave an octave higher, and from



the notes are produced by overblowing the first or fundamental notes a 12th.

The power of obtaining a clear intonation depends a great deal on the correctness of the performer's ear; the bassoon and the trombone are the only instruments which resemble the strings in this particular. Bassoons by old makers, Savary in particular, are generally considered preferable to those of modern makers, as none of the attempts to improve or simplify this complicated and difficult instrument have proved successful. It is the only reed of which this can be said.

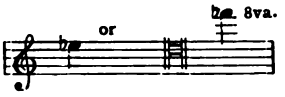
Compass.—The bassoon is an instrument reaching from B flat bass to A flat treble; its pitch lies two octaves below that of the oboe.



In notation, the bass and tenor clefs are used. The bassoon is not a transposing instrument—the music is written as sounded.

Quality of Tone.—The tone varies greatly in the different registers, being hard and thick in the lowest, sonorous and sweet in the medium, and somewhat

agonized in the upper register. The newest models have small harmonic holes near the crook, which en-



able the player to extend the compass to E flat in the treble. These notes are called "vox humana" from their resemblance to the voice; they greatly resemble those of the middle register of the cor anglais. The timbre of this instrument is similar to that of the cello, but more nasal and less penetrating.

Possibilities.—It is possible to play diatonic and chromatic scale and arpeggio passages, both legato and staccato, provided the tempo be not too quick and that the signature do not contain too many sharps or flats; sustained notes, crescendo and diminuendo; grace notes, etc.

The bassoon has been greatly valued in orchestras for two centuries or more; at first only as a bass instrument, but now as a tenor, or even alto occasionally. There are usually two bassoons, sometimes three, in the orchestra, and they play in parts or in unison. Haydn intrusted solo melody passages to it, as in the Minuet of the "Military" symphony, and gave it great prominence in his orchestral works; as did Beethoven, Mozart, and even Bach; indeed, it seems a favorite with all the great masters. Handel made a fine use of it in "Saul" in the scene with the witch of Endor, and in "Alexander's Feast" in the aria "Revenge, Timotheus cries." It is this instrument which is made by Mendelssohn, in the overture to "Midsummer Night's Dream," to represent the braying of the ass.

Origin.—This instrument, like the oboe, is thought to be of great antiquity in origin, its prototype being the shalmey or shawm; but in its present form it is said to have been discovered by Afranio of Ferrara, in the middle of the sixteenth century. The immediate forerunners of the bassoon, the pommers, brummers, bombards, as they were variously called, were already in use early in the sixteenth century—some time before Afranio's discovery, when there was a complete quartet of them. They consisted of a conical tube of wood, with a bell at one end and a bent metal tube at the other end, with a double-reed mouthpiece. The pommers were straight like oboes, and had pegs, which, when removed, altered the key of the instrument. This device would not be of much use in our modern music with its many modulations and abrupt transitions of keys.

The bassoon corresponds to the cello in strings, the bass clarinet in single reeds, and the bass tuba in brass-wind instruments. The French have a smaller bassoon, a fifth higher than the usual one, and called by them the basson quinte. It is a transposing instrument, sounding a fifth above the written notes.

VII. WOOD-WIND

THE DOUBLE BASSOON

French, Contrebasson. *German,* Contrafagott.
Italian, Contrafagotto.

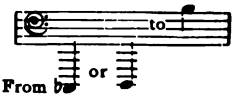
AS its name indicates, this instrument is the contra of the bassoon, and belongs to the double-reed wood-wind class.

Construction.—There are two chief makes: 1. The

Belgian, chiefly used in French-speaking countries, consisting of a conical-shaped metal tube, with a large bell. It rather resembles the bombardon in outline than the bassoon. The tone of this instrument is naturally not the true bassoon tone merely extended in its lower register, for the brass tube slightly increases the hardness and roughness of tone, unavoidable in any case. 2. The German Contrafagott (of which there are several models, Heckel's being the best known at the present time), which is more like the bassoon, consists of a wooden tube 16 feet 4 inches long, with conical bore doubled back four times on itself to make it less unwieldy. It terminates in a bell about four inches in diameter, and has a crook about two feet long, formed of a small brass tube with very narrow bore, to which is bound the double-reed mouthpiece.

Production of Sound.—The notes are formed through holes fitted with keys raised by levers, as in the bassoon; but the fingering of the double bassoon is by no means so complicated.

Compass.—The pitch of this instrument is an octave below that of the bassoon, and three octaves below that of the oboe; the compass extends from 16-foot C to middle C.



The notes of both extremes are difficult to produce. The bass clef is used in notation. Though the instrument is not really a transposing one, the music is always written an octave higher than the true sound to avoid using too many leger lines.

Quality of Tone.—The tone is rough and a little rattling in the lowest register, but in the medium and upper, more like that of the bassoon; its volume of sound is not quite adequate to the depth of pitch, which might be expected to be the case, seeing the comparative smallness of the mouthpiece. It forms a splendid bass when united with the contrabasses.

Possibilities.—The double bassoon possesses every chromatic semitone throughout its whole compass, and can therefore play with facility in any key. Quick passages are neither easy to play, nor would they be effective, for this is essentially a slow-speaking instrument. The lowest notes are very difficult to produce, and almost impossible to play piano; but the instrument forms a grand bass to the reed family, and supplies the four notes missing in the double bass to reach 16-foot C.

Origin.—The double bassoon traces its origin back to remote ages, like the rest of the reed family: its immediate forerunner was the shalmey or pommer family. (See Oboe, *Origin.*) The exact time when this instrument took its present form is wrapped in obscurity, but we may safely assume it to be at a time subsequent to that at which the oboe became known as such, that is to say, during the first half of the seventeenth century. We know that Handel first introduced it in the coronation anthems in honor of George II, and that it was in use in military bands before it was introduced into the orchestra. Owing to its faulty construction and weak, rattling tone, it fell into disuse in spite of the fact that the great masters Haydn, Mozart, Beethoven scored for it abundantly. It is now much used again in modern scores. Beethoven has scored

for the double bassoon in the C minor and the Ninth symphonies, and has even written an obbligato passage for it in "Fidelio." The double bassoon corresponds to the double bass in strings; in brass-wind, to the contrabass tuba; and in single reeds, to the pedal clarinet.

VIII. WOOD-WIND

THE CLARINET OR CLARIONET

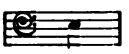
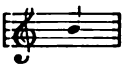
French, Clarinette. *German,* Klarinette.
Italian, Clarinetto.

THIS instrument presents a variety of interesting and important features.

Construction.—The clarinet is a single-reed wood-wind instrument, composed of a cylindrical tube of wood (generally cocus), terminating in a small bell. The beak-shaped mouthpiece of wood or ebonite (the latter substance does not crack or suffer from moisture) fits into a socket in the upper part of the tube. To this is bound by a ligature, adjusted by two screws, a thin and flattened piece of reed, which the player sets vibrating by blowing into the mouthpiece, thus producing the rich, mellow sounds peculiar to the clarinet family.

Production of Sound.—The notes are formed by means of nine open finger-holes and nine closed by keys raised by levers. These, with the bell, produce the nineteen semitones which constitute the fundamental scale of the clarinet; the rest of its compass is obtained by a key contrivance which, determining a node in the bore, raises the pitch of the instrument a twelfth.

The fundamental bell-note, which in the C clarinet was E

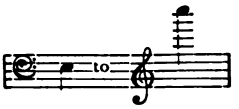
 will now be B 

and so on with each of the finger-holes.

The flute, oboe, and similar instruments give the octave, or first harmonic, when overblown, because they act like open pipes, which give the entire harmonic series. In the clarinets, however, the effect is that of a stopped pipe, closed at one end, because of the size and strength of the reed, which is said to "govern the tube." Stopped pipes give only half the harmonics (the second, fourth, sixth, etc.), thus causing a soft and mellow tone. In tubes, a node is the point where the air vibrates with constant pressure, as at the end of the tube or opposite an opened keyhole. In the oboe, in which the reed always vibrates with the air-column (the tube is said to govern the reed), the reed is at the point of maximum change in pressure, called the ventral segment. In the clarinet, however, the reed vibrates against the direction of the air-vibrations, as it vibrates only half as fast as the oboe reed in the same sized pipe. The clarinet reed merely doubles the same air-condition that comes up the tube to it, either condensation or rarefaction. Thus it has the effect of being halfway between the node and the proper position of the ventral segment. As no ventral segment can form at the reed of a clarinet, it follows that subdivision of the air-column into even fractions is impossible, and every other overtone of the series remains silent.

Compass.—The compass of the clarinet is three oc-

taves and a sixth with chromatic intervals, from E to C; the treble clef is used in notation. Real sounds from

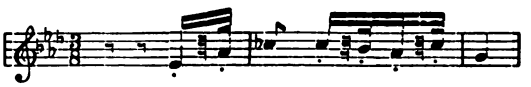


The lowest register is called chalumeau.

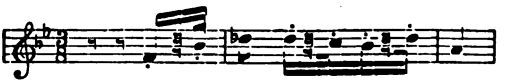
There are three principal treble clarinets, tuned to C, B flat, and A major, and as the fingering is the same for each, notes played on the B flat clarinet sound a tone lower, and on the A clarinet a minor third lower than the corresponding note on the C clarinet; it follows, therefore, that the music for the B flat clarinet must be written in a key a tone higher, and for the A clarinet a minor third higher than that employed in the composition. The clarinet is a transposing instrument. For example:

For the C clarinet or for the real sounds on the B flat and A clarinets:

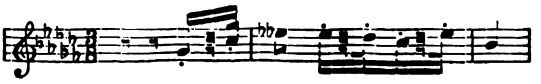
From Beethoven's Symphony, C minor. *Andante con moto.*



For the B flat clarinet written thus:



For the A clarinet written thus:



Quality of Tone.—The quality of tone of the three clarinets varies greatly; that of the C being shrill, hard, and less powerful than that of the other two; it is on that account little used, except for open-air music. The B flat clarinet is remarkable for great brilliancy and sonorousness, and is the most generally used, especially as solo instrument; the A clarinet is sweet and mellow. Composers take these differences of tone as well as those of pitch into consideration when writing for the instrument.

As in military bands the clarinets replace the violins, a smaller clarinet in E flat is used in addition, whose pitch is a minor third higher than that in C. There is also an A flat clarinet, transposing a sixth upward, which is used in some bands. Its tone is fiercely shrill, and it is only found in large military bands. The clarinet is much used for solo chamber and orchestral music; in the latter it very suitably carries on the melody, two or three clarinets being used sometimes in harmony, sometimes in unison.

Possibilities.—It is possible to play on this instrument sustained notes, diminuendo and crescendo; diatonic and chromatic scale and arpeggio passages, both in legato and staccato style; grace notes, trills, etc. Keys with not too many sharps or flats are the easiest for the clarinettist.

Origin.—The name of the instrument is derived from the Italian clarino; English, clarion (meaning trumpet). Its medieval prototype is probably, in common with all reed instruments, the shalmey or shawm. This was in its most primitive form a plain reed, called by the Romans calamus, which gave its name to the lowest register of the modern clarinet. Roman pifferari and

Italian shepherds still use a similar reed-pipe or shalmey. But to see it in its most primitive form, one must seek it among the peasants of the lower Rhine, where the youths make it in the spring, of green reeds or soft bark. It possesses a soft dreamy tone, not unlike that of the chalumeau register of the modern clarinet. The clarinet has only been known as such since about 1690, when it is said to have been invented by Johann Denner, of Nuremberg.

Neither Bach nor Handel has scored for the clarinet (the latter tried it once); Mozart was the first to make any extensive use of it in an orchestra, as a melody-leading instrument. Beethoven, Schumann, and in our own time Wagner and Brahms, have made the greatest use of it. Weber and Mendelssohn were the first to discover the worth of what may be called the king of the wood-wind instruments. The use of the deepest (chalumeau) register was superbly employed by Weber in his Incantation scene in "Der Freischütz," and Mendelssohn's "Scotch" symphony was the first symphony in which all the beauties of the clarinet were revealed.

IX. WOOD-WIND

THE BASSET HORN

French, Cor de Bassette. *German,* Bassetthorn.
Italian, Corno di Bassetto.

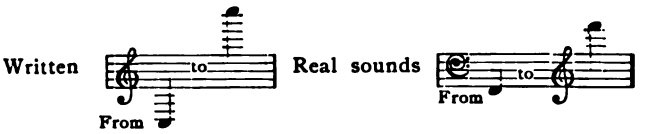
THE basset horn is the tenor clarinet, and therefore belongs to the family of wood-wind single-reed instruments.

Construction.—It is composed of a cylindrical tube of wood with a cylindrical bore ending in a bell, larger

than that of the clarinet; it is played through a beak-shaped mouthpiece containing a single reed. The basset horn has usually an angular bend in the middle, or it doubles upon itself like the bassoon, but with a larger bell, or the bell is turned upward in the contrary direction to the bend of the tube near the mouthpiece, like the bass clarinet.

Production of Sound.—The basset horn has the same fingering as the clarinet, but its pitch is a fifth lower than that of the C clarinet.

Compass.—The compass of this instrument is four octaves, from great F to F in the treble.



The basset horn is a transposing instrument, being in the key of F, and its music is written a fifth higher than the real sounds. The treble clef is used for all but the very lowest, for which the bass clef is used.

Possibilities.—These are the same as for the clarinet, except that the three or four lowest notes can only be intoned slowly and detached; the upper register, being better represented in the clarinet, is not much used.

Quality of Tone.—The quality of tone is extremely reedy, and rich in the low register, which is the most useful for orchestral purposes. It is especially effective in mournful music.

Origin.—The basset horn was invented by Horn, of Passau, in 1770; hence its name, which has nothing to do with the horn itself. In French the name has been translated into cor, while bassette is a diminutive of

bass. The predecessors and the prototypes of the basset horn are respectively the pommers and the shalmeys, as of the clarinet. Mozart, Beethoven, and Mendelssohn have written a great deal of chamber and orchestral music for this instrument, and with modern masters its popularity is on the increase.

X. WOOD-WIND

THE BASS CLARINET

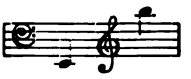
French, Clarinette Basse. *German,* Bassklarinette.
Italian, Clarinetto Basso.

THE bass clarinet is practically the A, B flat, or C clarinet, speaking an octave lower, and what has been said of the fingering and transposing of the clarinet holds good with regard to this instrument.

Construction.—The form of the bass clarinet differs from that of the treble clarinet in that it has a large gloxinia-shaped bell doubled up on the front of the instrument; the tube at the other extremity is serpent-shaped, and to it the mouthpiece is bound by means of a strong ligature with screws.

Production of Sound.—The sound is produced in the same manner as for the clarinets. On account of the great length of the instrument, the holes lie very far apart, which would make the instrument a very difficult one to play, but for the clever arrangement of the keys on long rods. The first makers of the instrument, who did not understand key work, made many futile attempts to cope with this difficulty by making the bore serpentine, by boring holes obliquely, etc. The fingering is now like that of the higher clarinets.

Compass.—The compass of the bass clarinet is the same as that of the higher clarinets in C, B flat, and A, an octave lower, therefore, for the C bass clarinet, thus:



Both bass and treble clefs are used in notation; when the latter is the case, it must be understood that the notes sound for the B flat clarinet a major ninth below, for the A a minor tenth below the written notes; but when the bass clef is used, the transposition is only 1 tone and 1½ tones respectively. The B flat and A bass clarinets are the most used.

Quality of Tone.—The quality of tone is less reedy than that of the higher clarinets; it rather resembles the bourdon stop on the organ. The tone is hollow and wanting in power, in the lowest register particularly.

Possibilities.—The bass clarinet has the same possibilities as the treble clarinet, with the exception of the lowest octave, which is slow-speaking, and chiefly used for sustained bass or melody notes, for the volume of sound makes rapid passages impossible. It is especially effective in gloomy and somber music.

Origin.—The prototype of the bass clarinet is naturally the same as that of the clarinet, but the instrument in its present form (or nearly so) was invented in 1793, and the first instrument was made by Greser of Dresden. Halary and Adolphe Sax, of Paris, and Wieprecht, improved upon the original models in the first half of the last century, and through others the instrument has reached its present perfection.

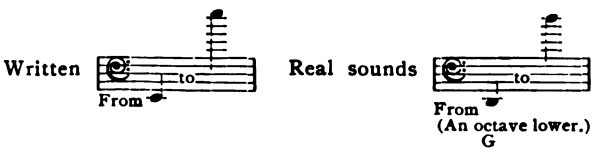
XI. WOOD-WIND

THE PEDAL CLARINET

THIS is a comparatively new instrument invented by M. F. Besson (patented in 1891), which completes the quartet of clarinets as the double bassoon completes that of the oboes.

Construction.—In principle of construction, this instrument resembles the clarinet; it consists of a tube ten feet long, an ingenious combination of cylindrical and conical bore, doubled up at the lower end, which terminates in a metal bell. The mouthpiece at the other end is exactly like that of the other clarinets, but of a larger size, and it turns at right angles to the body of the instrument; it is furnished with a single reed. On the tube are thirteen keys and two rings; the fingering being absolutely like that of the B flat clarinet except for the eight highest semitones.

Compass.—The normal compass of the pedal clarinet is as follows:



with an extended compass in the bass to B natural, which will shortly be made available for practical purposes.

This instrument is in B flat, two octaves below the B flat clarinet. As it is a transposing instrument, the music must be written for it in a key a tone higher;

and to avoid using many leger lines, an octave higher besides. The bass or F clef is used in notation.

Quality of Tone.—The tone is rich, full, and powerful; the very lowest notes being unavoidably a little rough in quality, but much more sonorous than the corresponding notes on the double bassoon. The upper register resembles the chalumeau (lower) register of the B flat clarinet in quality.

The instrument has been used in American orchestral scores by C. M. Loeffler.

XII. A RELATIVE OF THE CLARINET

THE SAXOPHONE

French, Saxophone. *German,* Saxophon.
Italian, Sassofone.

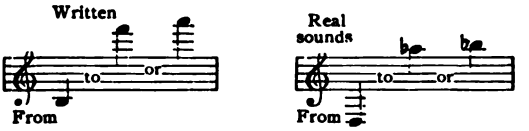
THE saxophone belongs to the clarinet family on account of its single-reed mouthpiece, but it cannot be classed as a wood-wind instrument, being made of brass.

Construction.—The saxophone resembles the bass and pedal clarinets at first sight; but its tube is conical, whereas that of all clarinets is cylindrical (except for the bell-joint in the bass and pedal models). The saxophone, then, consists of a wide-bore conical brass tube, doubled up near the bell, which is shaped somewhat like a gloxinia flower. The mouthpiece end is bent at right angles.

Production of Sound.—The saxophone has from eighteen to twenty keys; the fingering is similar to that of the flute and the oboe. The first fifteen semitones are obtained by opening successive keys, the rest of the

compass by means of the octave keys. The saxophone may, therefore, be termed an octave instrument.

Compass.—The compass of the various saxophones extends over two octaves and a fifth, with all chromatic intervals. The chief saxophones are the soprano in B flat; the alto in E flat; the tenor in B flat; and the bass in E flat or B flat. All these are transposing instruments, and the music for them has to be written in a correspondingly higher key; for instance, B flat being one tone below C (the standard for all transposing instruments), its music must be in a key one tone higher than that of the composition. As the alto in E flat is most used, its compass will be given here.



The treble or G clef is used for all instruments; the real sounds of the bass and contrabass saxophones being two octaves lower than the written notes.

Quality of Tone.—The tone is inferior to that of the clarinet in quality, and is something like that of the harmonium. Berlioz says that "it is soft and penetrating in the upper registers, full and rich in the lower, and in the medium profoundly expressive; it has vague analogies with the cello, clarinet, and cor anglais, with, however, a brazen tinge."

Possibilities.—It is possible to play on the saxophone sustained notes, crescendo and diminuendo; scale passages, diatonic and chromatic; and it is an easy instrument to play.

Origin.—The idea of using a single-reed mouthpiece, with a conical tube, is due to a clockmaker of Lisieux, Desfontenelles, who, in 1807, made a clarinet with a conical bore, and a bell turned vertically upward. In 1840 Adolphe Sax, in trying to produce a clarinet which would overblow an octave, like a flute, instead of a 12th, discovered the instrument which he named the saxophone. Modern French composers, Meyerbeer, Bizet, Massenet, and Ambroise Thomas among others, have scored for it in most of their works. Kastner introduced it into the orchestra in 1844, at Paris, in his opera "Le dernier roi de Juda." Its value as a solo instrument, supported by trombones or by the cor anglais, as in the ghost scene in Thomas's "Hamlet," is great; for it produces just the weird impression appropriate to the situation. The saxophone is greatly used in military bands in Belgium and France, where it has quite superseded the bassoon, and partly the clarinet.

XIII. BRASS-WIND

THE FRENCH HORN

French, Cor de Chasse. *German,* Waldhorn.
Italian, Corno.

THE French horn belongs to the class of brass-wind instruments, of which it is one of the most characteristic and difficult to master.

Construction.—The horn consists of three principal parts: 1. The body, seven feet four inches in length, a conical brass tube folded round spirally, and ending in a large wide-mouthed bell. 2. The crooks, interchange-

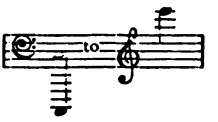
able spiral tubes of different lengths, each altering the pitch and key of the instrument. When the longest crook, the B flat basso, is used, the inclusive length of the tubing is about seventeen feet. 3. The mouthpiece, made of brass or silver in the shape of a funnel (to which the horn chiefly owes its softness and richness of tone), quite unlike that of any other instrument in use in orchestras, except the cornophone and the Wagner tubas (included on account of their names with the other tubas). Across the ring formed by the body is a pair of slides, each shaped like a capital **U**, fitting tightly into each other, which are used to tune the instrument, and as a compensator with the crooks. The three valves or pistons which are now to be found on most horns are attached to these tuning slides and to the body, and have greatly lessened the enormous difficulties the horn-players experienced in obtaining notes all strictly in tune and of an even quality; particularly as the instrument is so susceptible to changes of temperature that a cold crook suddenly put on often causes the first few notes to be flat.

Production of Sound.—The natural or open notes on the horn are not formed by closing or opening finger-holes by means of keys, as in the clarinet, oboe, etc.; they entirely depend upon (1) the length of tube used (additional length producing deeper pitch), this length being varied by means of the crooks, which are named after the fundamental or prime notes they give out; (2) the tension of the muscles of the mouth and lips and the increased pressure of breath, by which means the upper partial harmonics of the prime note are produced—the greater the tension, the higher the harmonic—this method of producing notes being called

overblowing;* (3) the valves mentioned above, which, when depressed by the fingers, produce supplementary notes by lowering the pitch of the instrument and of any crook in use at the same time—for the first valve 1 tone, for the second ½ tone, for the third 1½ tones. Two or more valves may also be used simultaneously to lower the pitch still further. These valve notes are almost equal in quality to the natural, particularly in the medium register. Another means of lowering the pitch of the horn a tone or a semitone respectively, is to insert the open hand right up the bore of the horn, or to insert it into the bell only; this method, which gives a muffled, veiled tone to the notes thus closed, is only used now when that peculiar baleful tone is required for effect. It was discovered in 1770 by Hampel, a horn-player in Dresden, and is called bouché, or hand-stopping. The "stopped tone" of the horn is the most ugly and baleful tone of the orchestra. It is used to picture anything evil or criminal. Wagner uses it thus in the last act of "Tannhäuser," in "Götterdämmerung" at the murder of Siegfried, etc.

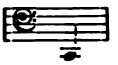
Compass.—The nominal compass of the horn with crooks is from 16-foot C

Actual sounds for C basso horn



but that low C, which is the real fundamental tone of the horn, can rarely be produced, and the effective register begins with 8-foot C.

* A term now also applied to excessive blowing on brass instruments, producing an objectionable blare.

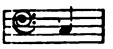


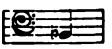
With three valves, therefore, the usual compass on the B flat bass might reach as low as

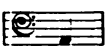
(Actual sounds)

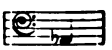
but the two or three notes of both extremities are seldom used. The music for the horn is usually written in C, the treble and the bass clefs being used in notation. The composers indicate the key or crook in which the horn is to play, but the performer often transposes for himself, when he can more easily produce by valves the open notes written for the old hand-horn.

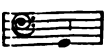
It is usually easier to produce low notes on the higher crooks and high notes on the lower crooks, but a great deal depends on the diameter of the mouthpiece used, and on the lip of the player. The chief crooks in use at present are eleven in number:

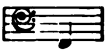
C alto  rarely used.

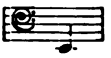
B flat alto  lowers the pitch 1 tone.

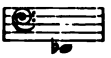
A  lowers the pitch 1½ tones.

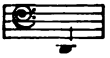
A flat  lowers the pitch 2 tones.

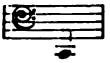
G  lowers the pitch 2½ tones.

F  lowers the pitch 3½ tones.

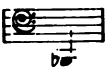
E  lowers the pitch 4 tones.

E flat  lowers the pitch 4½ tones.

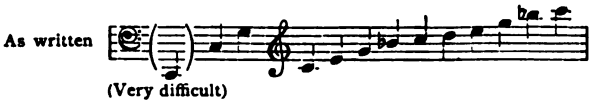
D  lowers the pitch 5 tones.

C Basso  lowers the pitch 6 tones (1 octave).

B Basso lowers the pitch 6½ tones.

B flat Basso  lowers the pitch 7 tones.

The harmonic series on the horn, that is to say the open notes which are possible on each crook (without using the valves), are:



The horn is a transposing instrument. As stated, its music is generally written in C, in which case the transposition is effected by the crooks. But as the F horn is considered the best, some composers always call for it, and write so as to bring it into the proper key. Thus, if it is written in C to sound in F, it would have to be written in D to sound in G, and so on.

Quality of Tone.—The timbre of the horn is mellow, sweet, and sonorous, having none of the vibrating, metallic sound of most other brass instruments with cup-shaped mouthpieces. The timbre of the piston notes is slightly different, being more resonant, partaking a little of the character of the trombone. For this reason both the natural and the valve horn are often found in the same orchestra, as a gain in tone-color results. Great masters in orchestration so choose the keys of the four or eight horns for which they are scoring as to use the greatest possible number of open notes, these being the most valuable. The horns generally play in pairs, the 1st and 3d, and the 2d and 4th; yet composers frequently use horns in four different keys.

Possibilities.—It is possible to play on this instrument sustained notes, diminuendo and crescendo; diatonic and chromatic scale and arpeggio passages, both legato and staccato; grace notes and trills; the latter are only advisable in the medium register.

Origin.—The horn is of very ancient origin. It was known in Egyptian, Assyrian, and Indian civilizations, and is to be found depicted in painting and sculpture on ancient temples, monuments, etc. The schofar of the Israelites was a "wether horn," as Rabbi Jehuda tells us in a treatise, and Rabbi Levi says, "It must be bent near the bell." This ancient instrument is still used in synagogues nowadays, at certain seasons of the year. The Roman buccina, or cornu, was a brass tube of great length, curved round spirally, like the modern helicon, but with a narrower bore, and worn like it round the performer's body; it gave the same harmonic series as the modern horn, and like it could

CHART OF SOME ORCHESTRAL INSTRUMENTS

not sound the fundamental tone on account of its small mouthpiece. Horns were, with other instruments, imported into Europe by the Moors and the crusaders; of those horns, the oliphant, or "Roland's horn," was the most ancient. Specimens of this instrument from the fourteenth century are extant; but we know that the Franks were familiar with the horn before the battle of Roncesvalles, 778 A.D., for Roland blew mighty blasts upon it to call Charlemagne to his assistance. This primitive horn continued in use for hunting-calls, till it finally, in the seventeentl. century, developed into a spirally bent brass tube with a large bell, and was worn round the body so as to leave the hands free. The natural horn was first introduced into an orchestra in England (under strong protest) in 1720; in France in 1757; and earlier in Germany, as Bach frequently scored for it. About 1815 pistons were invented in Prussia, and were speedily adapted to most brass instruments. Schumann was the first to introduce the valve-horn and valve-trumpet into the orchestra.

XIV. BRASS-WIND

THE TUBAS

French, Tubes. *German,* Tuben.

UNDER this name are comprised at the present day instruments of two distinct families: 1. The modern development of the bombardon and euphonium, which are really the bass saxhorns, having four or five pistons, of which one is set horizontally and the rest vertically in the instrument. In the older form of bombardon the pistons were all horizontally set. 2. The

Wagner tubas—the tenor or tenor-bass scored for by him in his "Nibelungen Ring" and other dramas. These instruments belong, by their mouthpiece, to the horn family, and differ from the bass tubas or bombardons in that they are played with a funnel-shaped instead of a cup-shaped mouthpiece, which makes them really basses of the French horn.

The saxhorn family has a cup-shaped mouthpiece, producing a quality of tone between that of a horn and a trombone.

THE EUPHONIUM

French, Baryton. *German,* Tenortube.
Called in the orchestra, Tuba; in a band, Euphonium.

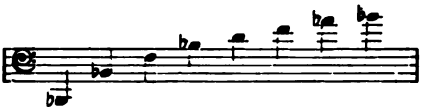
Construction.—This instrument consists of a wide-bore conical brass tube, ending in a wide-mouthed bell; it has a cup-shaped mouthpiece. Some euphoniums are made with four or five pistons; one horizontal and three or four vertical.

Production of Sound.—By the varied tension of the lips across the mouthpiece, as for the trumpet, trombone, etc., the harmonics or natural open notes are obtained by overblowing. The intervening notes are produced by means of the valves, which, by opening a passage into additional tubes, deepen the pitch 1, ½, 1½, 2½ tones, respectively; the horizontal valve, worked by the left hand, is used to make the lower notes strictly in tune, and opens a passage into a compensating tube.

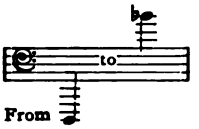
Compass.—The bass or F clef is used in notation. The euphonium is treated by some composers as a transposing instrument, but usually the real notes are

written. There are euphoniums in C and in B flat; the latter is the most used. This instrument gives out the fundamental tone readily, but no harmonics above the 8th, viz.:

Euphonium in B flat. Harmonic Series.



By means of all the valves used at once, the B an octave below can be reached, giving a compass of about four octaves.



Quality of Tone.—The quality of tone is rich, noble, and powerful, harmonizing well with that of the trombone, and speaking readily in the lower registers, but slowly of course, owing to the long dip of the pistons.

Possibilities.—It is possible to produce diatonic and chromatic scale passages, in moderate time; sustained notes, diminuendo and crescendo; legato and staccato effects. With the new short-action piston instruments, the dip of the piston being half that of the old instruments, rapid passages may be played as on the cornet.

Origin.—This instrument is of modern invention. It has sometimes been regarded as belonging to the sax-horn family of high-pitched tubas invented by Sax, from which, however, it differs by the proportions of the bore. Owing to the smaller caliber of the bore, the fundamental, together with the pedal notes obtainable

by means of valves, cannot be produced for practical purposes on the saxhorns, whereas they are effective on the tubas.

The compass given above is the extreme theoretical one. In practice D or E flat is the lowest effective note on the four-valve B flat euphonium and E or F on the three-valve instrument. The prototype of this instrument is the keyed bugle, invented by Halliday in 1810. For this reason, it is only scored for by modern composers. In military bands it is a great favorite. The euphonium is the cello of the brasses, and blends equally well with reed or brass. It is too large an instrument to admit of tonguing. To it are given either a melody or a bass; sometimes a counterpoint subject with the bassoon and horn.

XV. BRASS-WIND

THE BASS TUBA

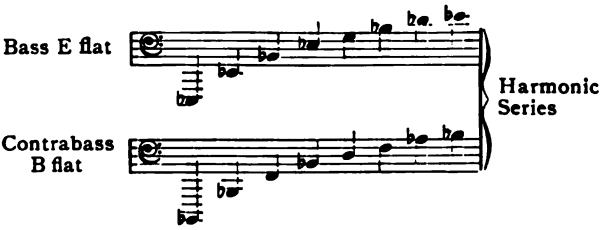
BOMBARDON

AMONG instruments of the trumpet family, the bass tubas hold an important place.

Construction.—The bombardon and its contrabass variety are constructed exactly like the euphonium (of which they are the basses), with four or five valves, lowering the pitch respectively 1, ½, 1½, 2½ tones, the fifth valve acting as a compensator to obtain the low notes strictly in tune. The bass tuba gives out the same harmonic series as the euphonium, and is in E flat or F for the bass, and C or even B flat for the contrabass; that is, an octave below the euphonium. The deeper the pitch of these brass instruments, the

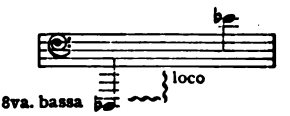
longer and wider the conical tube of which they consist. The euphonium is 26½ inches high, with a bell measuring 9⅞ inches across; whereas the monster contrabass tuba is 40 inches high and its bell measures 16 inches across.

Compass.—The compass of the tubas is the largest low compass in the orchestra.



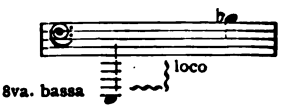
This compass is extended nearly an octave lower by using all four valves together. Higher harmonics are possible to a first-rate player with a good lip; the lower notes produced by the valves can hardly be heard unless doubled an octave higher by another tuba. A complete chromatic scale throughout its compass is to be obtained.

Compass of the bass tuba in E flat or F.



or higher still for first-rate player.

B flat



The bass clef is used in notation. These tubas are generally treated as non-transposing instruments, the music being written as sounded, except in France and Belgium, where the music for them is transposed.

Quality of Tone.—The tone is most sonorous, rich, and of immense power, partaking of that of the organ and trombone. The bass tuba corresponds to the double bass in strings, and to the pedal clarinet and double bassoon in reeds. A beautiful effect is produced by playing piano and pianissimo on this instrument. Wagner uses these instruments extensively in his dramas, in "The Ring" especially. The name of bombardon is still used now for the bass tuba in military bands. The older instrument of that name was made like a large tenor horn, but with a cup-shaped mouthpiece and a less expanded bell; the cylinders were also differently set, being all horizontal: the bell was to the left of the player, instead of to the right as in the newer models invented by Sax. The name of helicon is given to the bass or contrabass tuba in its circular form, worn round one shoulder, in military bands, which is a more convenient way of carrying the instrument when marching.

WAGNER TENOR AND TENOR-BASS TUBA

Construction.—This instrument belongs to the valve-horn family, of which it is the bass. It consists of a conical brass tube with a wider bore than the horn, and a wider-mouthed bell. This tube is not spirally bent, but more in the shape of the tenor horn, or of the euphonium with a horn, or funnel-shaped mouthpiece; and the bell to the right of the performer.

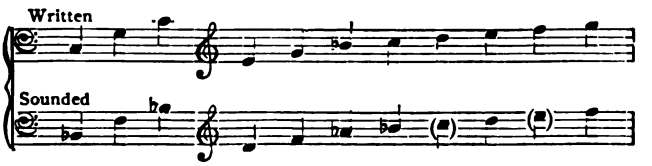
Production of Sound.—This tuba has four valves played with the left hand, which deepen the pitch for the bass tuba, respectively, 1, ½, 1½, and 2 tones, and for the tenor tuba, ½, 1, 1½, and 2 tones; which latter arrangement differs from that of all other valve systems. These valves help to form the intervening notes of the harmonic series, which lies between the 2d and 12th upper partials; the fundamental tone being very difficult, almost impossible, to produce. These open tones are produced by the varied tension of the lips across the mouthpiece, and by the pressure of breath called overblowing.

The tenor tuba is in B flat, and the bass in F, a fourth lower.

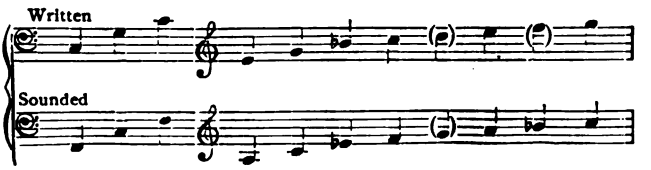
Compass.—This is a transposing instrument, and its music, like that of the horn, is always written in the key of C. The bass and treble clefs are used.

Harmonic Series or Open Notes (Wagner Tubas).

B flat Tenor

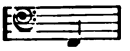


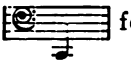
F Bass



The notes in curves are difficult to obtain strictly

in tune as open notes. By means of the valves the compass is extended downward to

 Real sound for the tenor in B flat,

and to  for the bass in F,

with all chromatic intervals throughout the compass.

Quality of Tone.—The quality of tone of the tenor instrument is similar to that of the valve-horn, but more metallic and therefore less pure and noble. The tenor-bass or bass in F is of a fuller and richer tone than the former, but of the same timbre. Wagner, instead of relying upon an instrument of different timbre like the trombone or euphonium, had these horns constructed to complete the quartet of horns. The euphonium, however, is often substituted for the one, or the tenor horn for the other.

Possibilities.—Sustained notes, diminuendo and crescendo; rhythmical figures, legato and staccato; arpeggios in moderate time, etc., are possible on this instrument.

XVI. BRASS-WIND

THE TROMBONE (SACKBUT)

French, Trombone. *German,* Posaune.
Italian, Trombone.

THE trombone belongs to the class of brass instruments with cup-shaped mouthpieces.

Construction.—This instrument consists of a tube doubled twice upon itself, with a wide bell at one end, and at the other a cup-shaped mouthpiece which varies in diameter according to the lip of the player (who

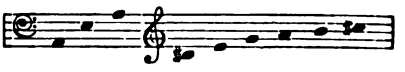
chooses one to suit him), and the pitch of the instrument. The bore is cylindrical except for the bell-joint, in which it is conical. The tubes forming the middle section, or slide, are made double, and are connected at the lower end of a semicircular tube. The outer tube, therefore, slides upon the inner, opening a greater length of tube proportionate to the depth of pitch required. The slide is held by a little bar across the upper portion, and is manipulated by the right hand.

Production of Sound.—Notes are produced on the trombone, as on the horn, by overblowing; that is, by the varying tension of the lips and pressure of breath, which give the harmonic series as far as the eighth or tenth upper partial; the fundamental tone or pedal note is hard to obtain and ineffective (as in the French horn). There are seven positions of the slide on the trombone, each giving a fundamental tone and its harmonic series, a semitone lower than the last; these positions are made by pulling out the slide a little more for each one, the first position being that in which the slide remains closed. The performer on the trombone is just as dependent on a correct ear as the performer on stringed instruments is, for these positions are found by ear. Appended is a table of the harmonics in general use for the seven positions, and the reader will perceive that a complete chromatic scale can thus be obtained in much the same way as by the positions of the violin.

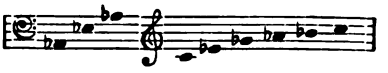
Seven positions on the B flat trombone (tenor-bass).

I. Position with closed slide.

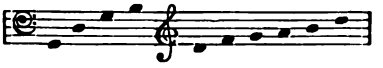
II. With the slide open about 3⅛ in.



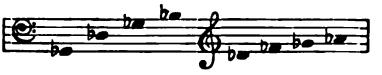
III. With the slide open about 6½ in.



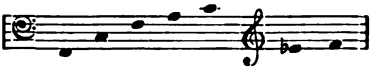
IV. About 10 in.



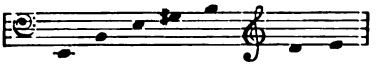
V. About 13¾ in.



VI. About 17¾ in.

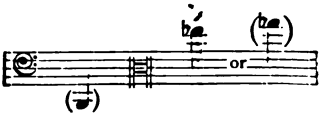


VII. About 22 in.

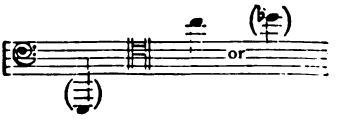


Compass.—The compass of the trombone is two octaves and a sixth. It is a non-transposing instrument; the music sounds as written. There are four chief trombones used in orchestras. The compass of each is as follows:

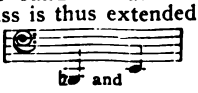
The Alto in F (or in E flat correspondingly lower).



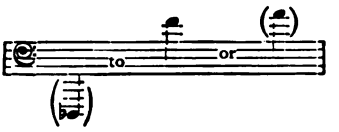
The Tenor or the Tenor-bass* in B flat.



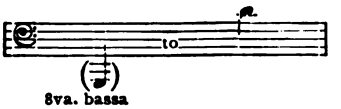
* The tenor-bass is of the same pitch as the tenor, but the bore being wider, the fundamental and pedal notes are effective and the compass is thus extended downward, but with a gap between



The Bass in G (for the Bass in F or the Double Slide in E flat, correspondingly lower).



The Contrabass in B flat. An octave below the Tenor-bass.



The compass given here is extreme, and includes the notes obtained by the slide; the notes which are in brackets are very difficult. The fundamental notes on these brass instruments are not very much used, as their tone is less rich than that of the notes obtained by overblowing. The contrabass trombone is not much in request in concert orchestras, but Wagner has scored for it effectively in "The Ring."

Quality of Tone.—This varies greatly in the different instruments and registers. The alto stands in regard to timbre between the trumpet and the French horn. The tenor and tenor-bass are the most generally used of all trombones; they are of powerful and penetrating tone-quality. The bass has a full, rich, sonorous timbre, suitable for heroic, majestic music. There are, besides the slide-trombone, which is most largely used, two others: 1. The valve-trombones, corresponding to the four above mentioned in keys, and built in the same manner with the addition of three valves, instead of the slide, which enable the performer to attain to a greater technical execution; but as the tone of the instrument suffers thereby, the valve-trombones are little used in concert orchestras. 2. The double-slide trombones, made in B flat, G bass, and in F and E flat contrabass, in which the extension of arm necessary in

the bass instruments for the lowest positions is considerably lessened; but greater nicety in the adjustment of the slide is, of course, required to produce the requisite semitone positions in tune.

Possibilities.—The trombone is capable of rendering sustained notes, diminuendo and crescendo; scales and arpeggios, except in the lowest registers and when the tempo is very quick. The legato style of playing is now dying out and giving place to the blare, which is greatly to be regretted.

Origin.—Trombone means in Italian, "large trumpet or tromba." The trombone family, being derived from the trumpet or buccina, is of great antiquity. The immediate predecessor of the trombone was the sackbut, the earliest form of draw or slide trumpet with a short slide giving at most three or four positions. The sackbut developed into the trombone with seven positions at the beginning of the sixteenth century, when we find that the Neuschels of Nuremberg made slide-trombones quite as good as the modern ones. Many hypotheses have been advanced to explain the origin of the word sackbut. The word seems to be derived from the Spanish *sacabuche* through the French *saquebute,* but the earliest mention of the instrument recorded in England is *shakbusshe* at the end of the fifteenth century, and *sackbut* appears at the beginning of the sixteenth century. The Spanish word is derived from *sacar,* to draw out, and *buk* or *buque,* a Moorish military trumpet, therefore obviously the "draw-trumpet," a designation by which the sackbut was, in fact, popularly known at first in the Netherlands, in Italy, in England, and in Scotland. The sackbut sprang into being, therefore, when the earliest application of the

slide was made to the trumpet. There is reason to think that the slide was used first with the long, straight or partly bent trumpet or busine, as it was called during the Middle Ages, and as a device for reducing the unwieldy length of the instrument. The slide was, therefore, at first pushed in to extend the compass by filling in the gaps of the scale, and in the normal position the slide was drawn out to the full extent of the tube. Pushing in the slide had the effect of raising the pitch proportionately by shifts of a tone each; three shifts (four positions) sufficing to fill in the diatonic scale between the second and eighth harmonics when the full possibilities of the slide were realized. After the trumpet had assumed its present form in the fifteenth century the inverse principle was applied to it; the slide was then made double, thus reducing the length of the shift by half, and it was drawn out to lower the pitch. This change was probably deliberately made in order to obtain new tenor and bass instruments. The sackbut was well known in England; in Henry VIII's time we hear that there were ten sackbuts in the royal band.

Trombones were justly recognized by Bach as adding great splendor to the orchestra, but they fell into disuse after his time, till Mozart restored them to an honorable place in the orchestra. Beethoven adopted them, and Wagner used them to perfection.

The trombone color is often menacing and threatening.

XVII. BRASS-WIND

THE TRUMPET

French, Trompette. *German,* Trompete.
Italian, Tromba.

THE trumpet belongs to the class of brass instruments with cup-shaped mouthpieces.

Construction.—The trumpet consists of a long, narrow tube of brass or silver, doubled round twice upon itself and ending in a bell. The bore, of very small caliber, is cylindrical from mouthpiece to bell-joint, including all valve-tubes and the tuning-slide. The bell-joint is conical and is of paramount importance in determining the timbre and harmonic scale of the trumpet. The mouthpiece is a hemispherical convex cup with a rim rounded on the surface; the shape is of importance, and the diameter of the mouthpiece varies according to the pitch and to the lip-power of the player, who must choose one to suit him. The lips are stretched across the cup, and act as vibrating membranes like the vocal cords. There are three chief kinds of trumpets: (1) The natural trumpet, in which the length and pitch are varied by means of crooks; (2) the valve-trumpet, provided with pistons; (3) the slide and double-slide trumpets, arranged like the trombone, with double sliding tubes. The first and third of these are now practically obsolete.

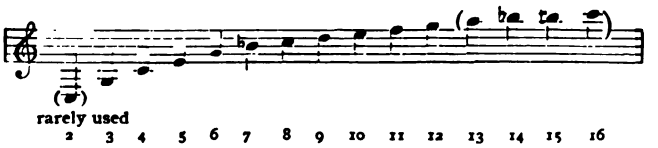
Production of Sound.—In the trumpet, as in the horn, the harmonic scale (from the third to the tenth upper partials) is produced by varying the tension of the lips and pressure of breath; the pitch of this scale may be altered in the natural trumpet by changing the

crook, and therefore the key of the instrument, which then gives out the same harmonics, but in the new key. Crooks are interchangeable coils of cylindrical tubing, adding length to the original column of air, and therefore deepening the pitch. They are called by the name of their fundamental tone, which cannot, however, be obtained on the trumpet. The crooks in use now are the F, E, E flat, D, C (higher), B flat, and A (lower).

In the valve or piston trumpet, a complete chromatic scale can be obtained as on the cornet, the first valve lowering the pitch 1 tone, the second ½ tone, the third 1½ tones. It is on the slide-trumpet, as on the trombone, that the player can obtain his notes most accurately in tune, as the ear assists in the adjustment of the slide, which has four positions similar to those of the trombone, the closed slide producing the first, and each of the others reproducing the harmonic series a semitone lower.

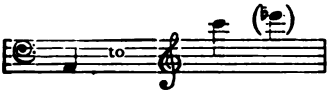
Trumpets are always scored for, like the French horn, in C, and are therefore transposing instruments.

Compass.—The harmonic series is as follows for all trumpets:



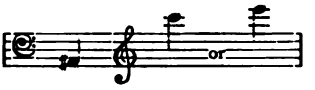
The notes in curves are hard to obtain. The lower B flat, always being a little flat, requires more tension, and can never be played in tune piano; the F is always sharp, which is remedied by a looser embouchure. The compass of the three kinds of trumpets is as follows (the real sounds are given):

For the natural trumpet with crooks.



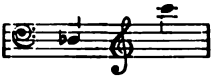
The note in curves when the high A flat crook is in use.

For the slide and double-slide trumpets with chromatic semitones.



This instrument is a non-transposing one, the music being written as sounded.

For the valve-trumpet in B flat.



Quality of Tone.—The tone of the natural and slide trumpets is penetrating, noble, brilliant, majestic, and suitable for triumphant and tragic strains; the lowest notes on trumpets of low register are bad, and the highest are comparatively easy to produce; notes played piano have a charming effect. The slight difference in the quality of tone between trumpet and trombone is accounted for by the wider bore in the latter. The tone of the valve-trumpet is similar to that of the cornet, but brighter and more incisive.

Possibilities.—All natural open notes except perhaps the lowest and highest can be sustained diminuendo and crescendo; rhythmical figures, scales, and arpeggio passages can be played in slow or quick time. Tonguing, double and triple, can be used with great effect

to produce in quick time a sort of tremolo or shake. Tonguing is the articulation with the tongue of the syllables "te-ke," or "ti-ke," quickly repeated for groups of two or four notes, and of "te-ke-ti" for triplets. On the valve-trumpet, chromatic as well as diatonic scales can be played.

Origin.—The trumpet is of ancient origin, having been in use among the ancient Egyptians and the Semitic races. The Greek βύκάνη, the Roman buccina and lituus, and the medieval busine were predecessors of the trumpet. The bore was partly or entirely cylindrical in all these, and the whole length of tube was almost or quite straight except in the buccina, which was curled round the performer's body, as is the case with the helicon variety of the modern tuba. The trumpet was known during the Middle Ages as the busine, tromba, trompe, or trump. In its earliest form it consisted of a long, slender, and almost cylindrical tube with a wide bell. The tuba may be distinguished from the busine by its frankly conical bore of much greater caliber. The busine has been pictured by nearly all the great masters. Fra Angelico has painted angels with trumpets, both straight and bent. The idea of bending the tube in three parallel branches is sometimes ascribed to Maurin (1498-1515), but pictures show that it must have been practised in Italy before that time. This form of trumpet, known as the natural, subsisted for three hundred years, and performers on it had acquired great dexterity and a large compass to the twentieth harmonic, as is proved by studying the scores of Handel and Bach. There is a modern straight soprano octave trumpet with three pistons, called the Bach trumpet, which is peculiarly

adapted for the scoring of those great masters. Th slide, keyed, and valve trumpets are the later develo ments of the instrument. Two or three trumpets a used in the orchestra as a rule; some of Wagner scores, such as "Tannhäuser" and "Lohengrin," requi many more. There is a growing tendency, much to b regretted, to replace this instrument by the more com monplace cornet, which has a less noble timbre. Thi is specially the case in France. Wagner has score for a bass trumpet with pistons in E flat, which i really a modified trombone. The trumpet was not favorite instrument with Beethoven, and there are n difficult passages for it in his works, although th trumpet-calls in the "Leonore" overtures, Nos. 2 an 3, are very important.

XVIII. BRASS-WIND

THE OPHICLEIDE AND THE DOUBLOPHONE

French, Basse d'Harmonie or Ophicleide.
German, Ophikleid.

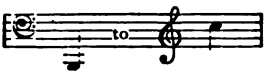
THE ophicleide belongs to the class of brass wind instruments with cup-shaped mouthpiece and it is one in which the length of tube is varied b means of lateral holes and keys.

Construction.—The instrument consists of a conica wooden or brass tube, widening out gradually to funnel-shaped bell, which is vertical; the tube i doubled upon itself once, ending at the narrow end i a tight coil, from which protrudes a straight piec bearing the mouthpiece, which is a hemispherical con-

vex cup. The modern ophicleides have eleven keys, which are quite easy to finger.

Production of Sound.—The lips stretched across the mouthpiece act as vibrating reeds, or as the vocal cords in the larynx. The bell can give out the fundamental C, but, as on the horn, it is practically impossible to produce it. Most ophicleides are in C; the first hole being left open lowers the pitch of the instrument a semitone to the key of B major; the second hole being kept closed raises the pitch a semitone from C to D flat; the third hole when closed raises the pitch to D; and so on with all the other holes, giving thirty-eight semitones. The method is similar to the positions on the violin and on the slide-trombone. This instrument is capable of the most accurate intonation.

Compass.—The compass of the ophicleide in C (the most used) is from



with all chromatic semitones; that is, just over three octaves. Both bass and treble clefs are used in notation. It is a non-transposing instrument.

Quality of Tone.—The tone of the lower registers is rough and bold, but capable of sustaining above it masses of brass harmonies; that of the medium is coarse, and that of the upper weak and unsteady. It seems a pity that an instrument so powerful, so easy to understand and learn, capable of absolutely accurate intonation, and possessing such a full compass, should have to be discarded on account of its timbre. Mendelssohn used it as an excellent imitation of the snoring

of Bottom the weaver, in his "Midsummer Night's Dream" overture.

Origin.—The name of the ophicleide means a snake and door-key in Greek; it is a development of the old serpent bass and of the Russian bassoon. The ophicleide was said to have been invented by Frichot, a French musician living in London, in 1790; the honor is also claimed for Regibo, of Lille, who made improvements in the bore of the old serpent in 1780; and by Halary, of Paris, who claims the discovery of it in 1815, as derived from Halliday's keyed bugle, invented in 1810. Halary patented the ophicleide in 1821. It is recorded that two ophicleides were used at a musical festival in Westminster Abbey in 1834. There is very little concerted music written for this instrument. Mendelssohn seems the only classical writer who employs it freely. The parts written for the serpent in old music were given to it, but now they are played by the double bassoon.

THE DOUBLOPHONE

This is a new Besson instrument of a compound nature. It belongs to the class of brass instruments with cup-shaped mouthpieces.

Construction.—It consists of (1) a three-valved euphonium and (2) a perfect valve-trombone. In form it resembles the euphonium with a second bell at an angle of about forty-five degrees to the original one. The doublophone possesses two complete sets of tubing: (1) the brass tube, with wide conical bore of the euphonium, and (2) the narrow tube, with mixed cylindrical and conical bore, of the trombone. Both these

tubes are in length and diameter of the usual proportions. The three pistons are common to both instruments, having a double set of bores, one for the euphonium and one for the trombone; a fourth auxiliary piston has a hook which enables the player to pull it out with the left thumb, and it returns automatically by means of a spring, when released, to its normal position. This fourth piston effects the instantaneous change from one instrument to the other; when it is closed, the column of air travels through the wide tubing of the euphonium; on opening the piston, the exit of the air is through the smaller-bored tubing and bell of the trombone; this latter unscrews, and can be taken off when only the euphonium is needed.

Compass and Production of Sound.—These are the same as for the tenor valve-trombone and the barytone euphonium. It is a non-transposing instrument; the music for it sounds as it is written.

Quality of Tone.—The tone is pure, rich, and full for the euphonium and clear and ringing for the trombone. For obtaining these effects in high degree, perfect mastery should be acquired by the player. Any misuse of the instrument becomes painfully apparent.

XIX. BRASS-WIND

THE CORNET

French, Cornet-à-Piston. *German,* Cornett.
Italian, Cornetto.

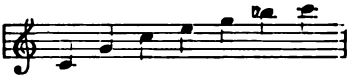
THE cornet belongs to the class of brass instruments with cup-shaped mouthpieces.

Construction.—It is composed of a cylindrical tube of brass or electrosilver of a larger bore than that of

the trumpet, but becoming conical just near the bell. This tube is doubled round upon itself. The bore of the cornet is mainly conical (but of a less pronounced taper than that of the flügelhorn) and also partly cylindrical, owing to the necessity of making all the valve-tubes and tuning-slides cylindrical. The mouthpiece, as before mentioned, is cupped like that of the trumpet, but larger, and as for that instrument the choice of the diameter depends much on the lip of the player.

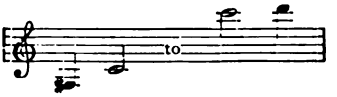
Production of Sound.—The sound is produced by stretching the lips across the mouthpiece, making them act like the vocal cords, and setting them in vibration by means of the breath. The harmonic series from the second to the eighth partial is obtained by the varied tension of the lips and pressure of breath called overblowing.

Harmonic Series.



The intermediate notes are obtained by means of three valves which lower the pitch, respectively, 1 tone, ½ tone, 1½ tones, by which means a chromatic scale throughout the compass can be obtained.

Compass.—The compass of the cornet is:



Quality of Tone.—The tone is somewhat between that of the horn and the trumpet, with all the blaring, penetrating quality of the latter, but without its heroic, majestic quality. There is a growing tendency in some orchestras, notably in France and America, to

allow the cornet to supersede the trumpet, which is greatly to be regretted; for although the cornet is bright in tone and an agile instrument with great technical capabilities, its sound is hard and commonplace, and more suitable for solo playing or military music than for rendering serious concerted works. In Germany it is little used except in military bands.

Possibilities.—Notes sustained, crescendo or diminuendo; diatonic or chromatic scale and arpeggio passages; leaps; trills; and, in fact, all kinds of musical figures in any key, can be easily played on the three-valved cornet. Double-tonguing is also practicable, as in the case of the flute; that is to say, the articulation with the tongue of the syllables "ti-ke" for double and "ti-ke-ti" for triple, produces a staccato effect. Cornets can be transposed, by means of crooks, into various keys; those of B flat and A being the most used. Crooks are interchangeable spiral tubes which add to the length of a column of air, and therefore to the depth of the pitch.

Origin.—The prototype of this instrument is thought to be the old posthorn, but the cornet seems to have been gradually evolved from the keyed bugle and the trumpet, rather than invented, and has been called a hybrid between the bugle and the high trumpet; it gives the same harmonics as the former, though the bore of the bugle is conical throughout. The modern cornet first made its appearance at the beginning of last century, though the name was formerly used to designate an ancient instrument of wood having a conical bore terminating without bell and blown through a cup or a funnel-shaped mouthpiece according to the type of cornet.

SECOND SECTION

STRINGED INSTRUMENTS

(*a*) *Played with a bow:* The Violin, Viola, Violoncello, Double Bass.
(*b*) *Twanged by the fingers:* The Harp.

I. THE VIOLIN OR FIDDLE

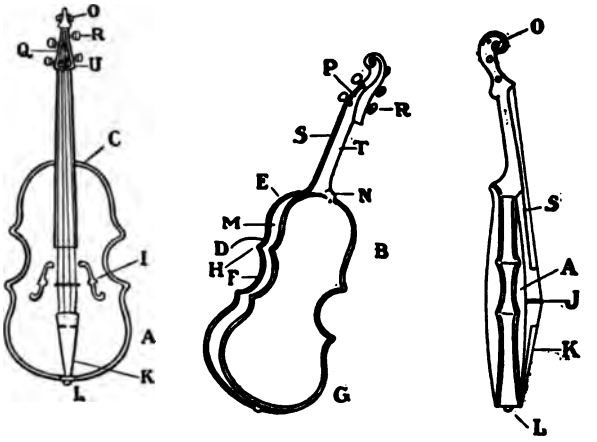
French, Violon. *German,* Violin or Geige.
Italian, Violino.

THE violin belongs to the class of stringed instruments played with a bow.

Construction.—It is made entirely of wood (except the strings), and consists of two parts: (1) the body; (2) the neck.

1. The body comprises: (A) The belly or soundboard forming the uppermost part of the body, and slightly and delicately arched. (B) The back, arched in the violin family and flat in that of the viols. (C) The purfling, a delicate little molding forming a border round the belly and back. (D) The edges which project over the sides or ribs and are called upper bouts (E) round the shoulders; center bouts (F) at the incurvations; and lower bouts (G) from

the latter to the tail-pin. (H) The corners, which are strengthened from within by means of the four corner blocks, 1½ inches in thickness, which fill in the corners and lie closely upon the inside between the sound-board and back. (I) The f-holes (as the sound-holes are called from their shape), which form a distinctive feature of the violin tribe. (J) The bridge, which as-



sumed its present delicate proportions under Stradivarius. (K) The tail-piece, which is pierced with sufficient holes to receive the strings. (L) The tail-pin with its rest, which is the kind of button to which the tail-piece is attached by means of a loop made from a gut string (generally a D string), and which the ebony rest supports at the edges of the violin, thus protecting them, and preventing the rubbing or chafing that would otherwise result from the tension of the loop. (M) The shoulder, which is at the base of the neck,

where it fits on to the body of the violin round the button (N) which is cut in one piece with the back—not added.

2. The neck comprises (O) the volute called the scroll, with (P) the cheeks of the scroll forming the walls of the peg-box (Q); O, P, and Q constituting the head. (R) The pegs, which are four in number in the violin, viola, and violoncello, and three, four, or five in the double bass, are screws serving to tighten or slacken the strings which are wound round them. (S) The fingerboard, which lies flat on the neck, but stands away from the soundboard; it enables the strings which would otherwise be open to be stopped by the fingers at any of the intervals of the diatonic and chromatic scale. (T) The neck proper, which is adjusted to the body at the shoulders round the button (N). (U) The nut, which is a small strip of ebony forming a little bridge between the peg-box and the fingerboard, is provided with small grooves to receive the strings and raise them clear of the fingerboard.

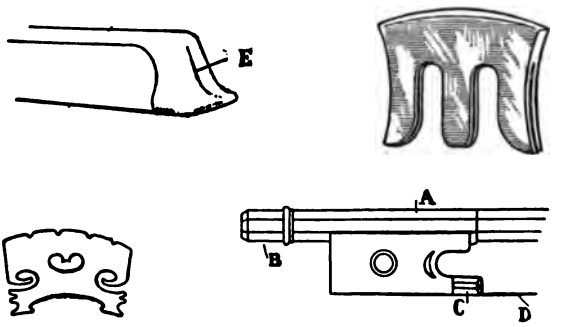
In the interior of the violin for the support of the bridge, and placed under its right foot, is a thin cylinder of wood called the sound-post; under the left foot is a beam called the bar, which is a piece of wood glued on lengthways to the arched soundboard.

The back, ribs, and bridge are of maple wood; the soundboard, bar, and soundpost, of fir; the fingerboard, nut, tail-piece, and pegs, usually of ebony; the exterior is varnished.

The most perfect bow, which serves as a model for others, is the one we owe to François Tourte, born in Paris, in 1747. It consists of:

(A) The stick, made of Pernambuco wood, which

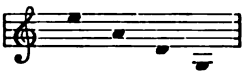
alone combines the requisite lightness and power of resistance; it is bent by heat till it is slightly convex to the hair. (B) The screw or ferrule at the extremity of the stick held by the hand, which is the means of tightening or loosening the hair of the bow. This screw, about 3½ inches long, hidden within the stick, runs through the eye of another little screw at right angles to it, which is firmly imbedded in the nut. (C) The nut slides up and down in answer to the screw along the stick, and contains a little cavity or chamber into which the knotted end of the hair is firmly fixed by means of a little wedge, and then flattened into a ribbon by means of a ferrule. The hair outside the nut is still further protected by a little mother-of-pearl slide. The hair (D) is carefully chosen from the best white horsehair, and each of the 150 or 200 composing the half-inch wide ribbon



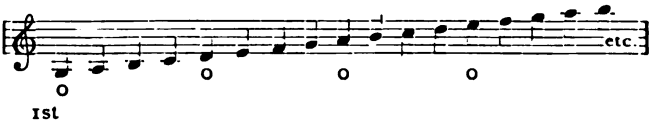
of each bow must be perfectly cylindrical and smooth. The head of the bow (E) is cut in one piece with the stick, and is fitted with a chamber and wedge contri-

vance similar to that of the nut, and in it the other end of the hair is immovably fixed.

Production of Sound.—Notes are produced in various ways on the violin. 1. The open notes by drawing the bow (the edge of the horsehair held at right angles to the strings) backward and forward between the bridge and the fingerboard, thus setting the strings in vibration. The names of the open strings are (1) E, (2) A, (3) D, (4) G.



2. Every other chromatic and diatonic succession of notes is obtained by using the bow as above, and in addition, pressing one of the strings against the fingerboard, with one of the four fingers of the left hand, according to the notes desired, thus shortening the strings by what is called stopping. The hand slides up the neck of the violin in fourteen different positions, each beginning one degree higher than the last, and using each of the four fingers in succession. This will be better understood from the following diagram. The first seven positions are most used:

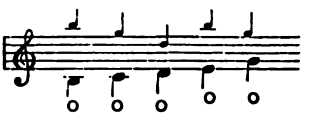


1st position	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4 etc.
2d "		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3
3d "			1	2	3	4	1	2	3	4	1	2	3	4	1	2 3
4th "				1	2	3	4	1	2	3	4	1	2	3	4	1
5th "					1	2	3	4	1	2	3	4	1	2	3	4
6th "						1	2	3	4	1	2	3	4	1	2	3 4
7th "							1	2	3	4	1	2	3	4	1	2 3

The "o" represents the open string. Beginning on the G string, and playing four notes in the first position on each of the strings (the first on each string being an open note), the above passage is obtained.

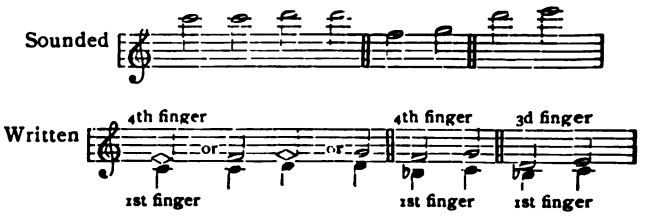
3. The third method of producing notes on the violin is by harmonics, notes having a different tone-color, and enabling the performer considerably to extend his compass in the highest register; there are two kinds of harmonics, natural and artificial. These harmonics are the tones which a string gives when, instead of vibrating as a whole, it vibrates in parts. The natural harmonics are obtained by touching the strings with the fingers of the left hand, so as to divide them in their length without sufficient pressure to bring them into contact with the fingerboard. The natural harmonics are indicated by an "o" under the note to be touched. The artificial harmonics make even higher sounds possible, and are produced by stopping an open string firmly with the first finger, and touching the string lightly with one of the other fingers at the intervals of a fourth (most generally used and easiest), of a fifth, or of a third. A few examples are subjoined; the complete list would be beyond the scope of this work.

Natural harmonics on the G string.



The little notes above show the harmonics, the quarter notes below, the note touched to produce it.

Artificial harmonics.



The quarter notes played with the first finger are pressed firmly, and the half notes are touched lightly with the fourth or third finger, thus producing various harmonics.

Compass.—The compass of the violin varies from three to four octaves generally in the orchestra, but in the high register no true limits can be assigned, for the virtuosi are continually extending it according to their skill.

The treble or G clef is used in notation.

The violin is a non-transposing instrument, which can play in all keys (the music for it sounds as written), but those which contain most open notes, i.e., those of C, G, D, A, E, F, and their relatives minor are the best, for the open notes are more sonorous than the stopped ones.

Quality of Tone.—An enormous variety of quality can be obtained from this instrument. Of the four strings, the notes of the E string are clear and sharp, of the A string soft and round, of the D string very mellow and deep like the chest notes of the human

voice, and of the G string, perhaps because covered with silver wire, broad and full. The harmonics have a quality resembling that of the flute (hence their name in French and German, flageolet), of birdlike ethereal clearness and softness.

If the strings of the violin are set in vibration by the bow near the bridge (sul ponticello, sur le chevalet), the tone becomes shriller, harder, and more incisive, as also when the bow is used near the nut; (au talon) when the bow touches the strings over the fingerboard (sul tasto, sur la touche) the tone becomes soft and flutelike. When the point of the bow is used, lightness is obtained—from the heel energy and from the whole length amplitude.

In addition to these, innumerable shades of tone can be produced on the violin by an imperceptible movement of the arm, a pressure with the bow, an unconscious sentiment of the performer, for there is no instrument, except the voice, that responds more readily to the soul of the musician, or is capable of greater expression; from it proceed at will sighs, laments, weeping, musing, joy, mirth, triumph, passion, etc.

Possibilities.—The technical possibilities of this instrument are almost infinite: chromatic and diatonic scale and arpeggio passages, both legato and staccato; chords (with reservations), trills, grace notes, sustained notes, diminuendo and crescendo, leaps, etc. Varied effects are produced by the tremolo—a rapid vibrating repetition of the same note by a rapid movement of the bow and by the pizzicato, when the strings, instead of being vibrated by the bow, are plucked by the fingers, as in playing the guitar, which produces

dry, short notes without resonance. Both these devices, the tremolo and the pizzicato, were invented by Monteverde at the beginning of the seventeenth century for dramatic effect in his opera "Tancredi e Clorinda." Further effects are obtained by use of the mute or sordino, a little wooden or brass implement, like a tiny comb, placed on the bridge, and which acts as a damper and produces a muffled, veiled softness peculiarly penetrating.

Origin of the Violin Family.—Two principal and diametrically opposed opinions prevail as to the ancestry of the violin. The first derives it from the Greek lyre through the intermediary of the monochord and its successors, the tromba marina, the crwth, crowd, rebec, gigue, and viol, leaving the Moorish rebab out of the question altogether. The second derives the violin from the East through the rebab, introduced into Spain by the Arabs in the eighth century, and gives it the ravanastron of the Hindus for a progenitor.

In determining the ancestry of the violin, let us leave the bow out of the question; firstly, because even less is known of its history than that of the violin; secondly, because it was applied equally to most stringed instruments with a resonating body and bridge, which before had been twanged by the fingers or plectrum.

The chief feature of the violin is the sound-chest, which, roughly speaking, is composed of two arched boards connected by ribs or sides in contradistinction to the vaulted backs and flat soundboards without ribs of the rebecs, gigues, crwths, lyres, lutes, mandolins, like a vertical section of a pear.

VIOLIN
English. Length, 23¼ in.; width, 8 in.

VIOLA DA GAMBA
Italian. Length, 47¼ in.

There was an ancient stringed instrument with a shallow sound-chest, of which the flat parallel boards were joined by ribs; in addition, its various types possessed bridge, pegs, tail-piece, sound-holes, purflings, and perhaps fingerboard; this prototype of the violin, which differs chiefly in its earliest form by having no neck, is, moreover, identical with the fiddle and violin in name; this instrument is the cithara of the Greeks, the chetarah or ketharah of the Chaldees, the kissar of the Nubians, the kithara of the Arabs (pronounced by the Arabs of Northern Africa "githara," by the Moors of Spain, cuitra or guitra, and finally called guitarra before the fourteenth century, and in England, guitar).

This instrument, differing in construction from the lyre, but of the same family, and introduced to the Greeks from Asia, did not come to us solely through the Arabs; before their invasion of Spain, the instrument was already in use there, introduced by the Romans under the name of fidicula (later corrupted and softened to vihuela, vielle, viol). San Isidore, a bishop of Seville, of the seventh century, tells us that the ancients called the kithara *fidicula*. Now the guitar-fiddle of the troubadours has the characteristic sound-chest of the violin, incurvations, bridge, sound-holes, tail-piece, fingerboard, and bow, all differing in detail from those of the modern violin, of course, but similar in principle. The ancestor of the modern guitar was identical with the guitar-fiddle until the moment when the bow was applied to the latter, then it rapidly developed into vielle, viol, violin; while the guitar remained practically stationary.

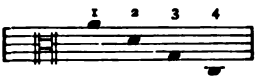
The instruments with vaulted sound-chests, the

rebab, rebec, crwth, crowd, rotta, gigue, need not be taken into consideration; they reached no modern development and are now extinct (the lute and mandolin are directly derived from Arab instruments of the same date as the rebab); further, they did not possess a single feature of the violin not already shown in the cithara.

The first steps toward the production of the violin are ascribed by some to Gaspar Duiffopruggar, or Tieffenbrücker (1514-72). He was born in Bavaria, and lived successively in Bologna, Paris, and Lyons. His violins were much prized for their beautiful tone, and are now very rare. Others name Gasparo da Salo as the inventor of the first modern violin, at the end of the sixteenth century. It is, however, from Cremona that we get the perfect instrument from the hands of the Amati family (1592-1682), Antonio Stradivarius (1650-1737), and the Guarneri family (1630 to about 1695). The first solos for the violin were written by Biagio Marini in the middle of the seventeenth century. Monteverde was the first to assign to the violin its proper place as leader and to give to the strings a prominent position in the balance of the orchestra. In modern orchestras of average size, there are from 18 to 38 violins, divided into firsts and seconds. On some great festival occasions, as will be seen from the table given on a preceding page, a vastly greater number have been employed. The tremendous effect of such a combination passes all description.

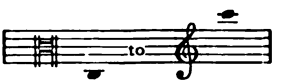
II. THE VIOLA

THIS member of the violin family is a little larger than the violin, and the remarks as to construction, possibilities, and origin apply equally to the viola —its compass lies a fifth below that of the violin, the four strings being (1) A, (2) D, (3) G, (4) C.



The alto clef, the C clef on the third line, is used in notation, except in the high register, for which the G clef is used.

Compass.—The practical compass of the viola is from



or higher, according to the capabilities of the performer.

Quality of Tone.—The sound of the strings of the viola is a peculiarly telling one and melancholy in accent. The tone of the upper register, forming the link between the cello and violin, is most used in the orchestra.

The viola has been much neglected and long unappreciated by musicians, who were content to use it to double, an octave higher, the upper part of the bass. The great masters since Mozart, however, have recognized its merits and written melodies and separate harmonies for it. The tone of the viola is so penetrating and so captivating to the ear that it is not

necessary to have as many violas as second violins in the orchestra.

Ritter Viola.—The ordinary viola is one-fifth larger in size than the violin, while its strings sound a perfect fifth lower. As the increased size is not sufficient to cause this lowering of pitch, the viola needs larger strings than the violin, and less tension. Both of these tend to dull the tone. Ritter constructed a viola half as large again as the violin, so that the depth of pitch depended on increased size alone. He called it the viola alta, but the public has given it his own name. It is so large that not every man can play it, but it is well worth playing, for its tones are full, rich, and very beautiful.

III. THE VIOLONCELLO

French, Violoncelle. *German,* Violoncell.
Italian, Violoncello.

THIS instrument belongs to the violin family, and is constructed on the same principles, but much larger. On account of its size, it is either held between the performer's knees, or it is made to rest on the floor by means of a foot or spike, the fingerboard pointing toward the left shoulder.

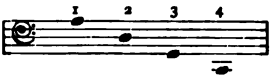
Production of Sound.—The sounds are produced in the same manner as on the violin, but the fingering is much more difficult; for the high register, shortening the strings by means of the thumb is resorted to. The thumb of the left hand is firmly placed horizontally across the string at the note over which the sign or is placed, and the four fingers then stop the notes

in the usual manner. The thumb notes are of a thinner and less agreeable quality than the others, and, except with first-rate performers, very difficult to obtain absolutely true and even in tone.

Harmonics, natural and artificial, are produced as on the violin, excepting that in the latter kind, instead of the first finger, the thumb is used to stop the string, the other fingers touching the nodal points.

The harmonics are very beautiful on the cello, sounding like the mellow, round notes of the flute; and they are accordingly used in preference to the ordinary notes of the upper register, as these have no beauty and are not much called into use, especially in the orchestra, where they would encroach on those of the viola.

The four strings of the cello bear the same names as those of the viola, but are pitched an octave lower, i.e., (1) A, (2) D, (3) G, (4) C.



The bass F clef, the tenor C clef on the fourth line, and treble or C clef are used in notation.

Compass.—The compass is 3½ octaves with all chromatic intervals, and higher notes are obtained by virtuosi in solo playing.

Quality of Tone.—The tone is of extreme sonority, mellowness, and richness, the notes of the A string having a voice of penetrating vigor and passionate

brilliancy, most suitable for rendering melodies. Nothing, in fact, can excel a mass of cellos on the A string in expression, in voluptuousness of sound and tender passion. The cello is the instrument most suited to express the deepest feelings of composer and performer.

Possibilities.—These are the same as for the violin, except that, on account of its greater length of string, passages requiring a great stretch of hand are less practicable, and owing to the great depth of quality and thickness of string the same extreme agility as on the violin is not possible; chords (with reservations), the pizzicato, tremolo, staccato, legato styles, trills, and the use of the mute are all practicable. In the orchestra the cellos often double the double bass an octave higher, and the music for both is written on one stave, and in that case with the word "bassi." However, since the days of Beethoven, melodies are frequently given to the cello. Wagner in his operas has scored solo melodies of wonderful beauty for this instrument.

Origin.—The name violoncello is a diminutive meaning "small violone," or double bass, not violin; but it is really a bass violin, formed on a different model to the violone, which has the sloping shoulders and flat back of the viol family, whereas those of the cello are rounded. The cello is traced to Italy early in the seventeenth century, when it formed the fundamental bass in Church music; its use in secular music and as a solo instrument is of later date, in the eighteenth century. The first English cello was made during the reign of Charles II. The immediate predecessor of the cello was the viola da gamba, which in its day was

a most important instrument. Its general disuse has been keenly regretted by many musicians. The violoncello was the only instrument admitted to the Church service by the Puritans in the early days of colonial life in America.

IV. THE DOUBLE BASS

French, Contrebasse. *Italian,* Contrabasso or Violone. *German,* Kontrabass.

THE double bass is the largest of the stringed instruments played with a bow, and belongs really to the viol family.

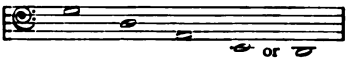
Construction.—The double bass has slanting instead of round shoulders; that is to say, where the belly is joined by the neck and fingerboard the former has a very decided point, whereas in the violin, viola, and cello the fingerboard is at right angles to the horizontal part of a wide curve. It is thought that the shoulders of the double bass are of necessity made drooping for additional strength of construction, on account of the strain occasioned by the tightness of the strings. The double bass was formerly made with a flat instead of an arched back; now the instrument is as often made with an arched as with a flat back. The bow is shorter and stouter in make than the violin bow.

Production of Sound.—The chief difference between the cello and double bass in producing the sound is that in the latter, owing to the extreme length of the string, the stretches for the fingers are very great, and owing to the thickness of the strings great force

is required to press them against the fingerboard when they are vibrating.

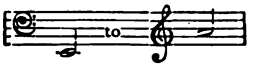
On account of the great size of the double bass the performer often plays standing.

The four-stringed double bass is now almost exclusively in use in orchestras, and the four strings are tuned in fourths, thus:



The F or bass clef is always used in notation, and to save so many leger lines, the music is always written an octave higher than played; but the double bass is not otherwise a transposing instrument.

Compass.—The compass is nearly three octaves, from



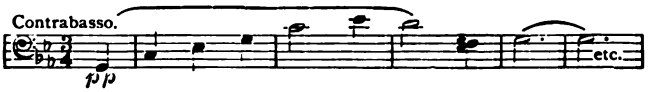
an octave lower.

Quality of Tone.—The tone is rather rough, very powerful, and varies greatly in its degrees of loud and soft. The deep notes when played piano sound weird or grotesque, and pizzicato tones are used sometimes instead of the kettledrum; when forte, the tone is overwhelming, grand, gigantic. The lowest octave is seldom used, except as a fundamental octave bass to cello, bassoon, or trombone. The tone in the pizzicato is full and rich, as the vibrations are slow, and it changes character according to the harmonies which lie above it. With a chord of the diminished seventh above it, the pizzicato sounds wild and threatening, but with the common chord, calm and majestic.

Both natural and artificial harmonics are possible on the double bass, but the natural are the best (see what is said of "harmonics" in connection with the violin). The upper register is not used in orchestral music, as that pitch belongs to the cello.

Possibilities.—Quick passages, though possible, are not advisable: they cannot sound clear, for the strings require time to vibrate; but excellent effect is produced by what is called the "intermittent tremolo"; owing to the elasticity of the bow, it rebounds several times on the strings when a single blow is sharply struck, forming a series of short tremolos. Long tremolos would be too exhausting to the player to be much used in quick tempi.

The double bass is the foundation of the whole orchestra, and therefore of great importance; it plays the lowest part, often, as its name indicates, only doubling the cello part an octave lower. It is only since the beginning of the last century that an independent voice has occasionally been allotted to it—as in the scherzo of Beethoven's symphony in C minor:



In the finale of the Fourth symphony and the trio of the scherzo of the Fifth, Beethoven also made daring innovations on the contrabass, giving it most rapid and independent passages.

Origin.—Whether the violin or the double bass was the first invented is still a matter of dispute. As the double bass has the characteristics of the viol family, it was probably the earlier instrument, and its name,

which means "large viol," seems to indicate that it is an offshoot of the viol, from which it only differs in the matter of the number of strings and of the sound-holes. These, instead of being C-shaped, back to back, are f-holes, as in the violin. The most probable hypothesis is that it is the bass viol brought up to date after the violin made its appearance, to complete the quartet.

V. THE HARP

French, Harpe. *German,* Harfe.
Italian, Arpa or Harpa.

THE harp belongs to the class of stringed instruments of which the strings are twanged or vibrated by the fingers.

Construction.—The harp is an instrument of triangular shape of the most elegant and beautiful proportions. Its various parts are (1) the pedestal or pedal-box, on which rest (2) the vertical pillar, and (3) the inclined convex body in which is set the sound-board; the pillar and body uphold (4) the curved neck with (5) the comb which conceals the mechanism for stopping the strings.

1. The pedestal or pedal-box forms the base of the harp, and in both single and double action harps contains seven pedals; the difference between the two actions is that in the single the pedals only raise each string one semitone, being capable of one drop only into a single notch; whereas in the double-action harp, the pedals, after a first drop, can by a further drop into a second notch shorten the string a second semi-

tone, thus making each string serve for flat, natural, and sharp. Each of the seven pedals acts upon one note of the diatonic scale of C flat major throughout the compass. This scale was not chosen arbitrarily, but out of necessity, on account of the construction of the harp with double action. The pedals remain in the notches until released by the foot, when a spiral spring sends the pedal back into its normal position. This spring can be seen lying under the pedal by turning up the harp. The pedestal, as its name indicates, serves merely to allow of the harp standing upright and to hold the pedals; hence its other name pedal-box.

2. The vertical pillar is a tunnel in which are situated the seven rods worked by the pedals, which set in motion the mechanism situated in the neck of the instrument. The pillar apparently rests on the pedestal at the base of the body; in reality it rests on a shoulder of brass very firmly screwed to the beam forming the lowest part of the body; and the pedal-box and its cover can be removed without in the least disturbing this connection.

3. The body or sound-chest of the harp is in the shape of half a cone. Érard was the first to make it in two pieces of wood, generally sycamore, instead of in staves like that of lutes, mandolins, etc. The flat soundboard is of Swiss pine. The body is strengthened on the inside by ribs, and at the back are five sound-holes, which, in older models, were furnished with shutter-doors opened at will by the swell pedal (the fourth from the left, worked by the left foot). As the increase of sound obtained by means of the swell shutters is practically nil, they have been dis-

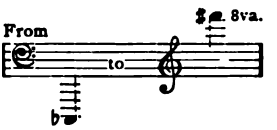
carded in the newest models. After making a knot at the end of the strings, they are inserted through holes in the center of the soundboard, and kept in their places by means of pegs, each provided with a groove in which the string lies.

4. The neck is a curved piece of wood which rests on the body at the treble end of the instrument, and joins the pillar at the bass end. In it are set the tuning-pins, round which the strings are wound. The neck further comprises two brass plates, sometimes called the comb, which conceal part of the mechanism for shortening the strings and producing additional semitones by the agency of the pedals. On the front brass plate (to the left of the player) are to be seen first a row of brass bridges, against which the strings rest on leaving the tuning-pins, and which determine the length of the string from the peg in the soundboard; secondly the two rows of brass disks called forks, connected by steel levers, each disk furnished with two studs for grasping the string and shortening it. If one watches these while the harp is being played, he will see that when the pedal is depressed to first notch the lower disk turns a little way on an arbor or mandrel, still keeping the studs clear of the string; the external steel levers are set in motion, and the result is that the upper disk revolves also till the string is caught between the two studs and shortened. If the same pedal be pressed down to the second notch, the lower disk revolves again till the string is a second time grasped and shortened, the upper disk remaining motionless the while. The reason for this is that each pedal is a lever set upon a spring, and by depressing the pedal, the pedal-rod in the pillar is drawn down,

setting in motion the chains and arbors connected with its upper extremity and situated within the brass plates, with the visible result described above.

The strings are of gut in the middle and upper registers, and of covered steel wire in the bass. The C strings are red and the F blue. The strings are usually forty-six in number, and are arranged in the diatonic scale of C flat major.

The compass of the harp is usually 6½ octaves.



The double stave is used in notation with the treble and bass clefs.

The old single-action harp, before the time of the Cousineaus, used almost always to be tuned in the key of E flat major.

Production of Sound.—The modern harp with double action is an instrument on which the enharmonic scale can be shown and heard, so that the appreciable difference between, for instance, F sharp and G flat can be detected. The harp in its normal condition, it has just been stated, is tuned to C flat major, but the performer can transpose it himself in a few seconds, by means of the pedals, into any other key. Each of the seven pedals influences one note of the scale throughout the pitch, beginning at the left side with D, C, and B, worked by the left foot (the pedals are called by their note names without reference to the fact that the harp stands normally in the

key of C flat major), the swell or crescendo pedal now intervenes, and toward the right are the E, F, G, and A pedals, worked by the right foot. The pedals, on being pressed by the foot, sink at will into a first notch, raising the pitch of all the notes of that name a semitone, or into a second notch, raising the pitch a whole tone. The pedals remain in the notches until released by means of the foot, a spring then causing them to rise to the notch for naturals or the flat position. On the D pedal being lowered into the first notch, the D flat becomes D natural, and into the second notch D sharp, and so on for all the pedals. If a piece, therefore, be in D flat major, the instrument is transposed to that key by depressing the F and C pedals to the first notch; if the piece be in E major, the E, A, and B pedals must be slipped into the first notch natural, and those of F, G, C, and D to the second sharp, and so on through all the keys. Accidentals or changes of key are easily made by means of the pedals, providing the transition be not too sudden. The reader will see that it is quite easy to transpose any piece of music into another key on the harp, as the fingering of any given passage is absolutely the same in all keys. Although the harp is thus able to transpose into any key at will, yet it is not called a transposing instrument, since its part in the score sounds exactly as written.

Only the thumbs, first, second, and ring fingers are used to vibrate the strings, the little finger not being either long or strong enough for the purpose.

Quality of Tone.—The quality of tone on the harp does not vary much in the different registers, but its tone is most brilliant and full in keys with flats, for

then the strings are open, and not shortened by the pedals; in those with many sharps its tone becomes more penetrating, but less sweet; it might be characterized as resonant, but weak in the bass for any but solo purposes, clear and penetrating in the middle and treble, and very hard and dry in the last octave and a half. When used in an orchestra, with other instruments playing anything but pianissimo, the lower register cannot be heard, and the notes of the upper, when reinforced by flutes, piccolos, or oboes, give incisiveness and crispness to the parts, but the actual notes of the harp are indistinguishable. The composer is therefore dependent on the middle register for his tone-color, and even then the accompanying parts must not be too heavily orchestrated, for harps cannot cope successfully with strings played sostenuto.

Various effects, however, can be produced on this instrument (1) by harmonics; (2) by damping; (3) by guitar tones; (4) by glissando.

1. Harmonics are produced by resting the ball of the hand on the middle of the string and setting it in vibration by the thumb or the first two fingers of the same hand; the notes thus produced are of a very mysterious and beautiful tone; they are only used in the middle register, as the upper harmonics are wanting in tone. Two or three harmonics can be sounded together with the left hand (as it plays the lower register), and by using both hands, of course, as many as four are possible. 2. Damping is easily effected by laying the palm against the string in the bass and the back of the finger in the treble. 3. Guitar or pizzicato notes are obtained by twanging the strings sharply in their lower part, near the soundboard,

with the nails. 4. The glissando is effected by sliding the thumb or finger along the strings in quick succession; and this does not necessarily produce a diatonic scale passage, for the harp can, by means of the pedals, be tuned beforehand to chords such as that of the diminished or dominant seventh, etc., etc.

Possibilities.—It is possible on the harp to play all diatonic scale and arpeggio passages—no chromatic, however, except in very slow tempo, on account of the action of the pedals, which requires time; chords of as many as four notes in each hand; trills (in the orchestra these are only effective in the upper register); while turns, successions of double notes in thirds, sixths, and octaves, can be easily played by using both hands, and are just possible in some cases to good players with one. The same note can be repeated slowly or quickly; in the latter case only by tuning the next string to a duplicate note, so as to give the string time to vibrate. For instance, if a repetition of G sharp be required, the G pedal is depressed to the second notch, and the A left in its normal condition, or upper notch, so that both strings practically sound the same note; the repetition is then made by two different fingers on different strings; the crescendo and diminuendo can also be effected. Although G sharp and A flat are the same on the piano and are called "synonymous," they are not quite identical in the scale of nature; there is a small but appreciable interval called enharmonic between them.

Origin.—The origin of the harp is anterior to the earliest records of civilization, and may have been suggested by the bow, since in the earliest representations of Egyptian harps there is merely a bow to which

are fastened several strings, instead of a distinct neck and body. No Egyptian harp has been found with a pillar. James Bruce was the first to discover that this instrument was known to the Egyptians, for he found a painting on a wall at Thebes in which are depicted two musicians playing harps which must have stood about six feet high. One of these is bow-shaped, and the other triangular; neither has a pillar, but in both the pedestal is highly ornamented and carved. This painting is assigned by Egyptologists to the thirteenth century B.C. An instrument having affinities with both primitive harp and nefer (a sort of guitar), and called a nanga, was bow-shaped, with a boat-shaped sound-chest, a parchment or skin soundboard, down the center of which one end of the string was fastened to a stick, showing the harp principle, while the other was wound round pegs placed in the upper part of the bow. Illustrations show us that this primitive harp was held horizontally on the shoulder in what must have been an exceedingly uncomfortable attitude.

The Assyrian harp was similar to the Egyptian, but less graceful; the sound-chest was placed uppermost, and the bar for attaching the strings at a lower angle; the pillar was absent. Early Irish and Welsh harps likewise have no pillar. The Irish harp of the seventeenth century had a straight soundboard, a curved pillar, and the neck was higher at the treble end than where it meets the pillar. The Welsh harp of the same period had a perpendicular body and a straight pillar of unusual height, so that the neck ascended from the body to it in a graceful curve.

During the Middle Ages many expedients were tried

to obtain accidental semitones, but none proved satisfactory. Chromatic harps were developed by German makers of the eighteenth century. About 1720 the first attempt at pedal mechanism by means of crooks pressing on the strings was made in Bavaria by Hochbrucker, but the system was too faulty to become general. Two Frenchmen, named Cousineau, were the first to make harps without crooks and yet with stopped semitones, by curving the neck to determine the proportions of the strings. They seem to have had an idea of double-action pedals in 1782, but it was imperfectly carried out, and the Revolution put an end to their work for the time. It was Sébastien Érard who gave us the double-action harp, patented in 1810.

Over three centuries ago, in 1581, when orchestras were in their infancy, we hear that in the "Ballet comique de la Royne," performed at the Château de Moutiers, on the occasion of the marriage of Mary of Lorraine with the Duc de Joyeuse, harps formed part of the orchestra or *concert de musique*. Be that as it may, the use of the harp was not general in the orchestra then; the old masters never scored for it, and it is only since about the thirties of the last century that it has found a place in orchestral music. At the present day there is at least one in every orchestra, to be used when the scores demand. As many as six are required and used at Bayreuth for Wagner's "Ring."

VI. TWO NEW HARPS

By Messrs. Lyon & Healy and
Messrs. Pleyel, Wolff & Co.

WHEN Sébastien Érard patented the double-action harp in 1810, it was thought he had put the seal upon the history of the construction of the harp, as the Cremona masters did upon that of the violin, but a few years ago two harps attracted attention in London and elsewhere, claiming, the one many substantial and important improvements in the old system, and the other the invention of a totally new one, as simple as it seems ingenious. Whether either of these harps will effect what it aims at—no less a task than to supersede all previous makes—is a question which only time can answer. Those who considered the Érard double-action harp perfect in its construction seem to have had reason on their side. The instrument which existed centuries before our era was absolutely simple and guiltless of mechanism; it had not even a pillar, and each string gave but one note. At the beginning of the last century the instrument was provided with complex and hidden mechanism which enabled the performer to modulate into every key, and besides to sound the enharmonic intervals throughout the compass. The instrument presented no insuperable difficulties to the learner, the tone was clear and pure, and the possibilities of its technique were many and various, if not all-satisfying. It fell short in two particulars: (1) no legato was possible, as indeed is the case with all stringed instruments of which the strings are twanged: (2) although each note could be played nat-

ural, sharp, or flat, a chromatic scale was only possible in very slow time—indeed, its leisurely pedal mechanism made it imperative that those who scored for the harp should thoroughly understand its construction. Other disadvantages of the instrument were that it so easily got out of tune, and that the strings constantly required renewing, owing to the action of the forks in shortening them for the semitones. When any little thing went wrong in the mechanism, there was nothing for it but to send the instrument to the maker for repairs. Eighty years elapsed without substantial alterations. The history of the construction of the harp remained the same. Before the old favorite make can be dislodged from its present position it will have to be proved that the old disadvantages have been overcome, or that a new field of technique has been opened out.

A simple statement of the claims of these two harps will enable the reader to form an idea of their merits, and as real excellence always finds its way to the front, time will do the rest.

THE CHROMATIC HARP

The very word chromatic, as applied to a harp, seems revolutionary; it would mean a totally new and extensive repertoire for the instrument, and if this harp fulfills its promises, this will indeed occur. The technique, too, will be entirely altered.

This harp is still of too recent a date and too untried for it to be possible to do more than give a very superficial account of it.

Origin.—The principles of the piano have been

borne in mind in constructing this harp, which is practically without mechanism. Henry Pape, a piano manufacturer, had in 1845 conceived the idea of a chromatic harp, of which the strings crossed in the center as in the instrument under consideration, and a description of it was published in the shape of a report. It was, however, not considered successful and nothing more was heard of the subject until Mr. Lyon, manager of the firm of Pleyel, Wolff & Co., took up the matter, and brought out the present harp.

Advantages Claimed.—The advantages this harp claims are: (1) That the whole pedal mechanism of the old harp has been discarded; (2) that the metal framing insures the strings keeping in tune as long as those of a piano; (3) that from its absence of mechanism there is nothing to get out of order; (4) that its technique is very easily acquired.

Construction.—This harp consists (1) of a pedestal on castors; (2) of a steel pillar which upholds (3) a wide neck containing two brass wrest-planks on which two rows of tuning-pins are placed; (4) of a sound-chest in which is firmly riveted the steel plate to which the strings are fastened, and of a soundboard pierced with eyelet-holes, through which the strings pass to the string-plate.

There is a string for every chromatic semitone, and the instrument is set in the key of C major, the white strings representing the white keys on the piano keyboard and the black strings corresponding to the black notes. The tuning-pins for the black keys are set in the left side of the neck in alternate groups of two and three, and those for the white in the right side in alternate groups of three and four; the strings cross

halfway between neck and soundboard, which is the point at which the fingers twang them, thus enabling the left hand to play black notes above and white below the crossing, and inversely for the right hand. The notes are tuned to a set of twelve tuning-buttons, each of which, on being pressed, gives out one note of the chromatic scale tuned to the pitch of the diapason normal. These buttons are placed in the neck of the harp.

Possibilities.—This chromatic harp allows of an extensive repertoire, it being, in fact, possible to play on it any piece written for the piano, so far as the actual notes are concerned, though not as written, of course, the legato style being impossible still. One can hardly imagine that Bach's fugues (which have been played on this instrument) would sound well, or indeed have much meaning, on the harp. This new invention would considerably enlarge the technical possibilities of the instrument, but its extended repertoire, to satisfy the requirements of art, must be written specially for it.

To facilitate rapid execution, a damping pedal has been added, which lowers upon the strings a large damper placed under the neck.

The chief disadvantages of this harp (and what new invention has none?) would seem to be (1) that the fingers work in two different planes; (2) that the very fact of the metal frame and pin-plate (the latter placed *within* the soundboard), rendered necessary by the increased tension of the extra strings, would probably tend to weaken the tone of the instrument.

THE LYON & HEALY HARP

To the casual observer, this harp does not differ from the Érard double-action, unless it be that in some models the soundboard is made wider for the purpose of strengthening the resonance power of the upper octaves. The chief advantages it claims are: Great solidity of construction, insuring durability, a singing tone, great responsiveness to the touch, and finally, an original method of construction on an interchangeable plan, so that any part which happens to break or get out of order can be replaced by post from the factory, thus rendering the transportation of the harp itself for repairs unnecessary. The improvements in construction which produce the above results are as follows:

1. By means of a simple and original manner of disposing the steel links (called chains), which are connected by lever systems to the rods set in motion by the pedals, each disk, wholly independently of its octaves, can be adjusted at will.

2. Instead of the pedal-rods being placed loosely in the pillar side by side with only tape wound round them, the rods are placed inside tubes which form a metal bearing, these tubes being brazed together in the proper direction and position. The tubes are then fastened solidly into the pillar, all rattling and sticking being thus obviated.

3. With regard to the arbors or mandrels which carry the disks and studs by means of which the strings are shortened to produce the semitones, there are important alterations. The parallel holes in the brass plates, one-tenth of an inch thick, which form the bear-

ings for the arbors, are subject to wear, and after a while these bearings become worn and have to be made smaller by means of a center punch.

The Lyon & Healy patent adjustment has a mandrel terminating in a taper collar which the tension of the strings on the disk cannot succeed in loosening, for as the hole grows larger the taper mandrel fills it up. The other end of the arbor rests on a spiral spring which holds it in its place with a yielding pressure which adjusts itself automatically to any slight change of form the metal frame may assume under climatic or other influences.

4. The body or sound-chest is now firmly connected with the pillar by means of two steel stirrups, which are riveted to the frame situated in the lower extremity of the body before the soundboard is screwed into its place. The other end of these stirrups is firmly fixed under the base-board of the pillar, thus bearing the strain of the tension of the covered steel and compound strings, which frequently causes ordinary harps to collapse at this joint.

5. By a new method of ribbing the body of the harp, it has been found possible to construct the swell-door in one instead of five pieces.

6. An original device called a spreader, placed within the sound-chest, prevents the breaking up of the soundboard near the point where the gut and compound strings meet and allows a free vibration of all the parts, thus giving a much increased volume of tone.

7. The stringing of this harp is accomplished without pegs, except in the upper octaves, the string being passed through a small eyelet-hole, and kept in its place by means of a knot.

THIRD SECTION

INSTRUMENTS OF PERCUSSION

INSTRUMENTS of percussion are divided into two distinct classes: (*a*) those of definite musical pitch which contribute definite notes to the harmony of the score, and (*b*) those of indefinite pitch which serve to mark the rhythm and add the tumult of festivity to the orchestra.

(*a*) Of definite musical pitch:

- Kettledrum.
- Bells.
- Celesta.
- Glockenspiel.
- Harmonica.
- Parsifal Bells (designed by Dr. Mottl).

(*b*) Of indefinite musical pitch:

- Bass Drum.
- Side Drum.
- Triangle.
- Cymbals.

I. THE KETTLEDRUM

German, Pauken. *French,* Timbales.
Italian, Timpani.

THE kettledrum belongs to the class of instruments of percussion having a definite musical pitch.

Construction.—This instrument consists of a piece of vellum stretched tightly over a hemispherical shell or pan of copper or brass, by means of screws working on an iron ring which fits closely round the head of the drum. The vellum is slackened or tightened at will, thus producing any one note within its compass of an octave. As each drum can give but one note at a time, and it takes some little time to alter all the screws, two or three kettledrums, often more, each tuned to a different note, are used in an orchestra or band.

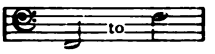
Various mechanisms have been tried to facilitate the changing of pitch, such as working the screws by means of a pedal, but the simpler model is generally used in orchestras.

This is the only instrument of the drum family which can be tuned to any definite musical sound, and its notes are as nearly definite as the pizzicato tones of the double bass.

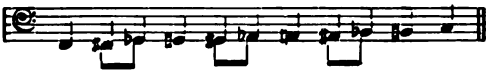
Production of Sound.—Two sticks are used to play the kettledrum, and these are of various kinds. The best are made of whalebone for elasticity, with a small wooden button at the end, covered with a thin piece of fine sponge. Others have a felt or india-rubber knob. Some are even made with a wooden uncovered knob, but are only used in exceptional cases to produce a harsh, noisy tone. The kettledrum is struck

at about one quarter of the diameter from the ring.

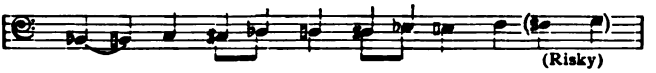
Compass.—Kettledrums can be tuned to any note within the compass of the octave.



They are of two sizes and of two different pitches. The larger instrument, which it is not advisable to tune below F if a distinct and definite note is required, takes any one of the following notes:



and the smaller, which, if made higher than the following limit, would sound poor and thin and might cause the vellum to burst, is tuned to the following:



When there are only two drums, the tonic and dominant or the tonic and subdominant are generally chosen, being the notes which enter into the composition of most of the chords of the key. The bass clef is used in notation.

The kettledrums used to be treated as transposing instruments, the music being written as for the horn in C, the key to which the drums were to be tuned being indicated in the score; now, however, composers write the real notes for them, but without accidentals.

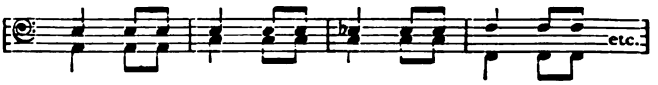
Quality of Tone and Possibilities.—The tone of a good drum in all but its extreme notes is sonorous, rich, and powerful. A harsh, overpowering quality

can be obtained when noise rather than music is required, by using uncovered drumsticks.

The drums can be covered or muffled by placing a piece of cloth over the vellum to deaden the sound; this device produces a mournful tone most effective in orchestration.

By judicious scoring for this instrument, beautiful effects can be obtained in rolls, in crescendo and diminuendo, or in forte and pianissimo passages. A great variety of rhythmical figures, on one note, or in intervals with two or more notes, can be produced.

Passages in double notes such as the following, as well as many more complicated, will give an idea of the capabilities of an instrument whose technique is even now developing.



This instrument has been used very effectively by Mozart and Mendelssohn, and Berlioz has introduced into his "Requiem" as many as eight pairs of drums, which require as many as ten drummers. Meyerbeer, in his opera of "Robert le Diable," wrote an entire melody, a march, for four kettledrums. Beethoven was the first to see that they might be used as solo instruments. The term drum used by musicians means the kettledrum, never the bass or side drum.

Origin.—From Egyptian, Assyrian, and Indian sculptures we have full evidence of the great popularity of drums of all kinds among the ancients. How the kettledrum reached Europe is a matter of some conjecture; some suggest through the Romans, as the

Greeks knew the side drum, which they called tympanum. They or the Romans may also have known the kettledrum. Others attribute its introduction to the Moors of Spain. It was used in Germany from early times. The first mention of its use in England appears to be in Froissart's description of the entry of Edward III into Calais in 1347. Of the words used for drums in the Middle Ages, nacaire, tambour, tympan, and tambale or tabale, all but tympan, from the Latin tympanum, are derived from the Arabic words tambur, tubal, and neggareth, which seems to point to a Moorish origin of the kettledrum. The next mention of the use of this instrument in England occurs about 1606, in Nicholls's "Progression of James I": "The King of Denmark's grume, riding upon a horse, with two drumes, one on each side of the horses' necke, whereon he strooke two little mallets of wood, a thing verie admirable to the common sorte, and much admired."

The earlier manner of bearing the instrument was to suspend it from the neck of a man, who on the march bore it on his back in front of the drummer. In a miniature of an illustrated manuscript at the British Museum, an Eastern banquet is depicted in which the potentate is enjoying the music of various instruments, and among them two kettledrums strapped to the back of a Nubian slave. This manuscript dates from the fourteenth century, and is by a skilled Genoese. The kettledrum was first used in an orchestra by Lulli, in the reign of Louis XIV, and it has kept its place ever since.

II. KETTLEDRUM WITH INSTANTANEOUS SYSTEM OF TUNING

THE kettledrum in this form differs substantially from the ordinary drums.

Construction.—The construction differs from that of the kettledrum tuned by means of screws in the following particulars: A simple mechanism in the interior, consisting of a system of cords regulated by screws and rods, is worked from the outside by means of a handle. Some kettledrums have a little dial on whose face are 28 notches, each numbered, enabling the performer to tune the drum instantly to any note within its compass, by remembering the number that corresponds to each note, and pointing the indicator to it on the face of the dial. Of course the cords may stretch in time, flattening the pitch and causing the representative numbers to change. Temperature has a similar effect upon the pitch. Should a performer therefore find at a concert, for instance, that the heated atmosphere has put his drum out of tune, he need only turn the handle one or more notches to the right to bring his instrument back to pitch.

Each drumhead is capable of giving a compass of about half an octave; it will, therefore, be seen that each note has more than one notch at its service. Should the indicator point to No. 28, and yet by reason of the stretching of the cords the instrument be not sharp enough, another turn or two to the right, beginning again at No. 1, can be given, which will have the desired effect. To slacken the head, the handle must be turned to the left and a little catch lifted.

As this drum can be tuned in a moment by means of the dial to a certain note, there is no occasion to keep the head taut when the instrument is not in use.

Quality of Tone.—The little interior mechanism, which is of an elastic nature, has no detrimental effect on the tone, but on the contrary tends to increase its volume and improve its quality. The body of the drum, which acts as a sound-box in increasing the tone, has a sound-hole underneath.

Constantly new effects are being evolved from the kettledrums, simple as their tone-color seems to be. Wagner often employed them, in soft irregular strokes (entirely alone), to picture anxiety, suspense, or terror, as in "The Flying Dutchman" at the first meeting of Senta and the hero, in "Lohengrin" at the death of Telramund, etc.

Richard Strauss in his "Elektra" caused them to be struck with birch rods, to make a peculiarly strident tone.

III. ORCHESTRAL BELLS

GLOCKENSPIEL, HARMONICA, XYLOPHONE, CELESTA

Italian, Campanelli. *French,* Carillon.

THE bells belong to the class of instruments of percussion with a definite sonorousness, and are of various forms and kinds, according to the use to which they are put. Bells are scored for either to mark the rhythm and add brightness and piquancy to music, or for the purpose of imitating church or other bells; it is with the former that we are chiefly concerned here, and for them the word bell is generally a misnomer, other shapes of metal or wood having been found

more convenient. The term Glockenspiel is understood to mean a set or frame of bells that can be easily played by one performer by means of steel hammers.

Construction.—The pyramid-shaped Glockenspiel consists of an octave of semitone hemispherical bells, placed one above the other, and fastened to an iron rod which passes through the center of each. They gradually become smaller as the pitch rises, which gives the instrument the shape of an elongated pyramid.

The lyre-shaped Glockenspiel, carillon, or harmonica, a newer model which has now replaced the pyramid-shaped, has instead of bells twelve or more bars of steel graduating in size according to their pitch. These are fastened to bars of steel which follow the same direction as the strings in a lyre, and are set perpendicularly in a steel frame in the shape of a lyre. This harmonica is played by means of little steel hammers attached to whalebone sticks.

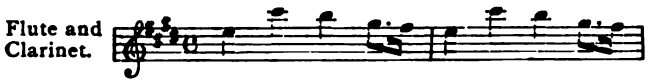
Compass.—The compass of this instrument lies between

(real sounds), or even higher.

Quality of Tone.—Wagner has exercised exquisite judgment in the use of this instrument, notably in the Fire Scene of "Die Walküre" (last act), and in the Peasants' Waltz in the last scene of "Die Meistersinger."

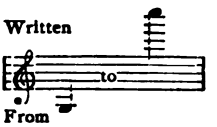
Feuerzauber. "Die Walküre." Act III.

Sounded an octave higher.



The quality of tone given by these instruments is penetrating, clear, and sparkling. Mozart uses the Glockenspiel prominently for an entire melody in his "Magic Flute."

The xylophone is made of little wooden staves, each like a half-cylinder, resting on two wooden bars often covered with straw, and arranged in such a manner that each half-cylinder or semitone is isolated. The xylophone is played with two little wooden hammers, and has a compass of nearly or quite three octaves, according to the makers.

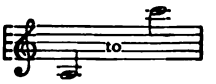


Sounded an octave higher.

The quality of tone is inferior to that of the preceding instruments and is not so clear.

The keyed harmonica is a fourth form of this little instrument and consists of a keyboard, to each note of which a little hammer is attached, which strikes a bar of glass when the key is depressed.

This harmonica has a compass of over two octaves, from



Sounded an octave higher.

It is used of necessity when chords are written for the Glockenspiel, as in Mozart's "Magic Flute," otherwise more than one player would be required, but chords do not often sound well on the bells owing to the inequalities of tone in the different notes. It is possible to produce various effects, scale and arpeggio passages, in single or double notes, on the keyed harmonica.

Mozart, Handel, Gluck, Meyerbeer, Berlioz, Wagner, and Saint-Saëns have scored for these instruments.

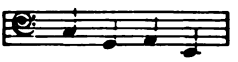
THE CELESTA

The celesta, used by Richard Strauss and others, consists of a set of bells, played by a keyboard, and contained in a case much like that of a cabinet organ. It consists of bars or plates of steel hung over resonating boxes of wood. The bars are struck by hammers. The celesta was invented in 1886 by Auguste Mustel, of Paris. Its tone is much sweeter and fuller than that of the Glockenspiel. Tchaikovsky was much impressed by it and wrote a whole melody for it in his "Casse-Noisette" ballet—the Dance of the Sugar-plum Fairy, "La Fee Dragée." This was its first prominent use, but since then it has been copiously employed in modern scores. It has about the same compass as the keyed harmonica.

IV. THE BELLS

GONGS, TUBES, "PARSIFAL" BELLS

IN some dramatic works composers have wished to imitate the sound of church bells, as for instance in Sir Arthur Seymour Sullivan's "Golden Legend," Verdi's "Trovatore," Mascagni's "Cavalleria Rusticana," Leoncavallo's "Pagliacci," Wagner's "Rienzi" and "Parsifal." It is evident that in these cases larger bells, of a deeper sound than the foregoing, are necessary. This effect is somewhat difficult to attain satisfactorily, for the following reasons: Large bells of a very low pitch are too cumbersome and heavy for the orchestra; the notes are often impure and obscured by the dissonant harmonics; and bells large enough to give the notes required for "Parsifal" would overpower



the orchestra with their volume of sound. Various substitutes have been tried, but of course no other instrument gives a tone in the least similar to that of the bell, which independently of the harmonics has two distinct simultaneous notes: first, the tap tone which gives the pitch and is dependent on the manner in which the bulk of the metal is disposed in casting the bell, as well as on the quality and proportions of copper and tin used; secondly, the hum tone, or lower accompanying note, whose interval from the tap tone varies in different bells according to pitch and the taste of the maker, but on which the purity of the tone of the bell greatly depends. A flattened major seventh

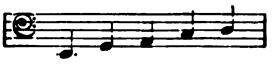
below the tap tone is generally found to give the best results in a deep bass bell. The hum tone is governed by the relative proportions of the shape given to the bell.

In a letter written on the subject of the bells at Madame Wagner's request, Herr Julius Kniese, of Bayreuth, says that in order to obtain the effect of deep church bells as scored by Wagner in "Parsifal," the following combination was adopted: (1) A large stringed instrument with four keys; (2) four tom-toms or gongs tuned to the pitch of the four notes; (3) a bass tuba which plays the notes staccato in quavers, to help to make them more distinct; and (4) a fifth tom-tom on which a roll is executed with a drumstick. The steel tubes were tried, but as their pitch was two octaves too high, they sounded tinkly, and introduced an element foreign to the noble music of the Grail; they were therefore abandoned.

Construction and Production of Sound.—The "Parsifal" bell instrument has been constructed somewhat on the principle of the grand piano; the massive frame is shaped like a long dining-table, and rests on four solid feet; the soundboard is of spruce fir strengthened underneath by belly bars. There are thirty strings in all, mostly covered with copper wire; six to each note, of which three are in unison and give the fundamental note, and three an octave higher. The mechanism is simplicity itself. There is no action; the strings are struck by large wooden hammers, thickly and loosely covered with cotton-wool, which the performer sets in motion by a strong but elastic blow from his fist. The hammers are fastened to arms about twenty-two inches long,

fixed by screws to a strong wooden span bridge, placed horizontally above the strings at about two-fifths of the length from the front; on the front of the arm is the name of the note, and farther back the green felt ledge struck by the fist. To control the rebound of the hammers, a strong wooden bar on two arms, fastened also to the span bridge, overhangs the notes. Two belly bridges and two wrest-plank bridges, one set for each octave, determine the length of the strings, and the belly bridge, as in other stringed instruments, is the medium through which the vibrations of the strings are communicated to the soundboard. The strings are fastened to thirty equidistant pegs at the farther end of the instrument, and to five groups of wrest-pins firmly set in an iron wrest-plank in the front of the instrument. The back of the instrument is strengthened by an iron plate and four iron pillars to resist the tension of the strings.

Compass.—The bell instrument has five notes. The



D, which is not required for "Parsifal," is used in the "Cavalleria Rusticana" in conjunction with the A.

Quality of Tone.—The quality of tone is rich, powerful, and noble, and carries well. It is clearly a good substitute for church bells in the orchestra, since it preserves the dignity of the atmosphere, which is destroyed by the triviality of all Glockenspiels and tubes.

There have, however, recently been much larger and deeper steel tubes placed upon the market, and these give both the clangor and solemnity of the large bell

very satisfactorily. They have been successfully employed in Tchaikovsky's "1812" overture.

V. INSTRUMENTS OF INDEFINITE MUSICAL PITCH

THE BASS OR BIG DRUM

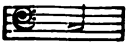
French, Grosse Caisse. *German,* Grosse Trommel. *Italian,* Gran Cassa or Tambura.

UNDER this head several instruments, of various degrees of importance, are to be considered, and first in order is the bass drum.

Construction.—The bass drum consists of a short wooden cylinder, of a very wide diameter, covered at both ends by vellum stretched over small hoops, kept in place by larger hoops. The two large hoops are connected by a cord passing in zigzags from hoop to hoop. These cords, and with them the large hoops, and therefore the vellum, are tightened and slackened by means of leather braces. Systems of rods and screws are also used for the purpose. In the orchestra the bass drum is mounted on a stand.

Production of Sound.—The bass drum is struck in the center with a stick, ending in a large, soft, round knob. This instrument does not need tuning, but the pitch may be made acuter or deeper, according to whether a rich full tone, or a mere dull thud is required, by respectively tightening or loosening the braces. The instrument can also be muffled by covering it with a piece of cloth.

Notation and Possibilities.—The music is written



generally on a stave with the bass clef, the C being used to show the rhythm and accents. Sometimes, however, no stave is used, a single note on a single line being found sufficient. The bass drum has a place in every orchestra, but the more sparingly it is employed the better. Its use is to accentuate the rhythm. It is possible to make gradations in forte and piano, and to play eighth and sixteenth notes when the tempo is not too quick. A roll can be played by holding a short stick, furnished with a knob at each end, in the middle, and striking alternately with each end; or, better still, by using two kettledrum sticks. It is significant that Wagner has not once scored for the bass drum since he composed "Rienzi"; but other composers, Verdi, Gounod, Berlioz, and Sullivan, have used it very effectively.

Origin.—The popularity of all kinds of drums in the most ancient civilizations is established beyond doubt by the numerous representations of the instrument, in great varieties of size and shape, on sculptures and paintings of Egypt, Assyria, and India. The tympanum, a very shallow side or bass drum, was known to both Greeks and Romans, and through them its use spread all over Europe. The tympanum was certainly known in England long before the crusades, for Bede mentions it in his list of instruments. Its use for military purposes in England possibly dates from the reign of Richard I, who had become accustomed to drums in the crusades. The drums were slung to the back of a man who walked in front of the drummer. Side drums were of a much larger size than they are now, till the reign of Elizabeth, and were held horizontally, and beaten, of course, on one head only. How

early the use of snares was known is uncertain, but Prätorius and Mersenne both mention them (early seventeenth century). Marais (1656-1728) was, as far as we know, the first to score for the side drum, in his opera "Alcione." Gluck used it in "Iphigénie en Tauride," and other composers have occasionally followed this example.

THE SIDE OR SNARE DRUM

French, Tambour Militaire. *German,* Militär Trommel. *Italian,* Tamburo Militare.

Construction.—The side drum consists of a small wooden or brass cylinder with a vellum at each end. The parchments are lapped over small hoops, and pressed firmly down by larger hoops. These and the vellums are tightened, as in the bass drum, either by cords and leather braces, or by rods and screws. Across the lower head are stretched several catgut strings, called snares, which produce a rattling sound at each stroke on the upper head, owing to the sympathetic vibration of the lower head, which jars against the snares.

Production of Sound.—The drum is struck in the center by two small sticks with elongated heads, or knobs of hard wood, which produce a rasping sound. The roll is produced by striking two blows alternately with each hand quite regularly, and very rapidly, which gives a rattling tremolo sound. The side drum can be muffled by loosening the cords, or by inserting a piece of cloth or a silk handkerchief between the snares and the parchment; this produces an uncanny sound. The tenor drum is very similar to the side drum, but is made only of wood, and has no snares. The side drum

is used in orchestra to give a military color to the music. The origin of the instrument has been given with that of the brass drum.

THE TRIANGLE

German, Triangel. *French,* Triangle.
Italian, Triangolo.

The triangle is a triangular rod of steel, open and curved slightly at one corner. The triangle is played by means of a steel stick with a wooden handle. Varied effects of rhythm and different grades of forte and piano can be obtained. A sort of tremolo can be produced by striking each end of the triangle alternately in rapid succession. The treble clef is used when the triangle is scored for on a separate staff, but when its music is the same as for the big drum, the bass clef is used. The tone is clear and ringing, but should have no definite pitch, and for that reason small triangles are best, as large ones give out a definite and disagreeable note. The triangle is suspended by a loop. This instrument is used to mark the rhythm, but even more as an embellishment. Beethoven, Mozart, and many other classical as well as modern composers, have made use of this little instrument in some of their works. Weber has used it prominently in Gypsy music, as, for example, in his "Preciosa."

CYMBALS

German, Becken. *Italian,* Piatti or Cinelli.
French, Cymbales.

Construction.—Cymbals consist of two thin round plates of copper and tin alloy, with a handle strap in the middle of each for holding them. The sound

is obtained not by clashing them together, but by rubbing their edges together by a sliding movement. Sometimes one is held in the left hand by a strap and struck with the soft stick of the bass drum, which produces a sound akin to that of the tom-tom. A weird, savage effect can also be produced by holding one cymbal suspended by the strap, and letting the drummer execute a roll on it as it swings.

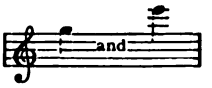
Possibilities.—All shades of forte and piano can be obtained. When the cymbals are to be allowed to vibrate, the composer indicates this by writing, "Let them vibrate." "Damp the sound" is his direction if the contrary effect is desired. To do this, the player presses the cymbals against his chest as soon as he has played the note, which stops the vibrations. The duration of the vibration is indicated by the value of the note used on the staves; its name signifies nothing, as the pitch of the cymbals is indefinite. This instrument plays the same music as the bass drum, unless otherwise indicated by "Senza piatti," or "Piatti soli." Cymbals are to be found in all orchestras, though they are but occasionally required. They are useful for marking the rhythm, and for producing weird, fantastic, or military color; their shrill, quivering notes are heard above those of all the other instruments playing fortissimo. Cymbals are unrivaled for giving the effect of frenzy, fury, or of a bacchanalian revel, as in the "Tannhäuser" Venus music, or in Grieg's "Peer Gynt." When damped, a sinister impression of dire misfortune is conveyed.

Origin.—The origin of the cymbals is prehistoric, and they are found depicted on mural paintings and sculptures of the highest antiquity; their construction

is so simple, and their possibilities so limited, that they have undergone little change or development.

THE ANCIENT CYMBALS

This instrument belongs to the class of instruments of percussion with a definite musical pitch. The ancient cymbals are very small, resembling shallow bells; they are made of much thicker metal than the modern cymbals, and give out a distinct note tuned to one of the notes lying between



They are played in the same manner as the modern; their sound is sweet but powerful, like that of the keyed harmonica. They are rarely used in the orchestra now.

THE PAVILLON CHINOIS, OR CHAPEAU CHINOIS
TURKISH CRESCENT, OR JINGLING JOHNNY

German, Schellenbaum or Türkischer Halbmond.

The pavillon chinois, an instrument of percussion incapable of producing definite musical tones, was formerly used in military bands, but never in the orchestra, where an instrument of somewhat similar form, the lyre-shaped Glockenspiel, often confused with the pavillon chinois, is used to mark the rhythm. The pavillon chinois consists of a pole about six feet high, surmounted by a crescent and star and conical metal cap or pavillon hung with small bells. Under the pa-

villon is a squat lyre, or fanciful double crescent, likewise hung with tiny bells and long streamers of horsehair. The pavillon chinois is played by shaking the pole up and down and jingling the bells. Thus it is seen that among instruments it is primitive in type.

FOURTH SECTION

FAMILIAR NON-ORCHESTRAL INSTRUMENTS

I. THE GRAND PIANOFORTE

German, Flügel. *French,* Piano à queue.
Italian, Piano a coda.

THE piano belongs to the class of stringed instruments with keyboards.

Construction.—The outward appearance of the piano in all its varieties of square, upright, grand, concert grand, etc., is too well known to need description. This instrument possesses keys sufficient for a chromatic scale throughout its compass; each note is provided with one, two, or three strings in unison (according to the pitch, the medium and high register usually having three), a hammer and a damper (except the two highest octaves, which have no dampers), besides a complex system of mechanism called the action. The chief parts of a pianoforte, about which it imports us to know something, are: (1) The case and framing; (2) the strings; (3) the wrest-plank; (4) the soundboard or belly; (5) the bridges; (6)

the action; and (7) the pedals. The last will be treated in *Production of Sound.*

1. The case, made of solid wood, with a veneering of mahogany or oak, must be so strongly constructed as to resist the enormous tension of the strings—approaching thirty tons in a modern concert grand. To that end concurs the cast-iron or steel frame placed over the soundboard, which has strong iron or steel bars (the number varying with different makers) extending across the strings, from side to side of the frame but not touching them. Holes of irregular shape are made in the metal frame for the sake of lightness.

2. The strings are now made of the strongest and, at the same time, the most elastic of metal, tempered cast-steel wire, which is able to meet a tension of at least 200 pounds for each string in recent grands. The pitch of the strings depends on their diameter as well as their length. In order to reduce the latter for the bass strings, the expedient of covering them with copper or white metal wire has been resorted to, as in the G string on the violin, for example. The earliest stringed instruments, with keyboards, of which we have any knowledge, seem to have made their appearance in Europe about the middle of the fourteenth century, contemporaneously with the first manufacturers of drawn iron wire at Nuremberg.

3. The wrest-plank, corresponding to the peg-box of violins, will be found in grand pianos at the keyboard end under the music rest. Into it are inserted the wrest or tuning pins. In order to bear the strain of the enormous tension, the wrest-plank is made of layers of the hardest woods—oak, beech, etc.—in each of which the grain runs at right angles to that of the

others to prevent splitting. The whole is further strengthened with a metal plate, to assist in insuring the rigidity of the tuning-pins.

4. The soundboard consists of lengths of spruce or fir, glued together, like that used for the best violin bellies, chosen on account of its elasticity and resonant power, and to both sides of which several coatings of varnish are applied to prevent cracking or warping. The soundboard, which is slightly convex to the strings, lies under them along the whole length and breadth of the piano nearly as far as the wrest-plank. Between the soundboard and the wrest-plank there is a narrow space left, through which the hammers rise to strike the strings. Strings, when set in vibration, give but a poor sound of themselves, owing to the small surface they possess wherewith to influence or set vibrating the surrounding strata of air. But when the strings rest on a wooden bridge, the molecular vibration communicated to them by the fingers through the keys and the hammers is transmitted by the bridge to the soundboard in shocks, which are repeated by the surrounding atmosphere. Thus are sounds produced, the intensity and character of which are directly governed by the quality of the blow or pressure brought to bear upon the strings by the performer.

The vibration of the soundboard as a whole being undesirable, it is prevented by gluing thin ribs of wood—the belly bars—under it, of which the grain runs in a different direction to that of the soundboard. These bars give elasticity and help the formation of vibrating centers or nodes. The soundboard has to be tense to take up the vibrations initiated by the strings.

5. The bridges are two in number in the piano, each corresponding to a similar part of the violin, i.e.: (1) the belly bridge to the violin bridge; (2) the wrest-plank bridge to the nut of the peg-box of the violin. The first of these bridges, by means of which the vibrations of the strings are communicated to the belly, is made of hard wood. The belly bridge is divided in all pianos, straight or overstrung. With the latter the divisions are disposed at differing angles, so that the bass bridge strings cross over the others in the lower part of the scaling. As a matter of fact, overstringing has entirely changed pianoforte construction. The steel strings are stretched over the longer part, and the covered bass strings (lying above the steel ones) rest on the shorter bridge behind the other and nearer the end of the case. The wrest-plank bridge, to which the strings are pinned down to prevent their being forced upward by the blow of the hammer, is the point from which the vibrating length of the string is measured.

6. The action, situated beyond the keys under the wrest-plank, comprises the complex system of levers, hammers, checks, dampers, etc., which are set working when a key is depressed. To describe minutely this action, which differs in details according to the various makers, is not possible within our limits. The hammers are covered with the finest white felt, and resemble in shape a section out of the middle of a pear. The checks are situated just behind the hammers. A damper made of thick felt lies over or under each set of three strings in unison.

Production of Sound.—By depressing a key with a finger, a system of levers is set working which raises

SPINET

Italian, 16th century. Length, 5ft. 4 in.; width, 1 ft. 6 in.

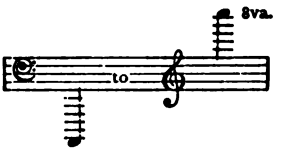
HARPSICHORD

Flemish, abt. 1650. Length, 7 ft. 6 in.; width, 2 ft. 10 in.

the hammer and causes it to strike the strings and then rebound. In the earliest action by Cristofori, there was nothing to control this rebound, and the key would have to rise to its level of rest before another sound could be elicited. The inventor noticed this defect, and remedied it by placing behind the hammer to control it a piece of hard leather which acted as a check. This check-action has been developed and perfected in our days, culminating in the double escapement action. The damper, which is automatically removed from the string as the key is pressed down, likewise returns to its normal position on the string as the key rises, and thus stops further vibrations after the finger leaves the key. Should the performer, however, wish these vibrations to continue, he can, by means of the right pedal, the "loud pedal" as it is frequently miscalled, which is indicated by "ped" under the note, remove the dampers and thus call out the sympathetic upper partials or harmonics of the strings, as well as prolonging the tone.

The soft pedal, on the left side, indicated by "una corda" and released at the words "tre corde," shifts the hammers so that instead of three strings, they only strike two, formerly one; the soundboard, which lies directly under the strings, sets up a series of sympathetic vibrations from the other two only, which gives a mysterious, veiled quality to the notes. Some pianos, instead of having this "shifting action," have a piece of felt, which, being interposed by the action of the pedal, softens the impact, and deadens the sound. Many upright pianos move the hammers nearer the wires, thus causing a shorter stroke, and consequently a softer tone.

Compass.—The compass of a full-sized modern piano is seven and a quarter octaves, from subcontra A to five-lined C, according to piano nomenclature. The full octaves, beginning with the lowest C, are called contra, great, small, one-lined, two-lined, three-lined, and four-lined. The deficiency in length in the bass strings is balanced by extra thickness, while in the treble, with modern high tension scale, the length is greater in proportion.



Two staves are required in notation, the bass and treble clefs being used. No exact limits to each stave can be given, but middle C

is the nominal boundary.

Quality of Tone.—This is subject to so many conditions that it is impossible to do more than refer to a few of them. The tone varies according to the different makers, some making brilliancy and clearness, some mellowness, others a sweet, singing tone their specialty, and so on. The various kinds of touches are more influential than anything else in producing tone (by tone, we mean breadth, depth, and fullness of sound, which is quite independent of loudness). Given an instrument of the very best, two performers

playing the same composition on it may give a totally different idea of its tone; the one producing plenty of sound in the forte passages, but leaving the ear unsatisfied, on account of a certain hardness and want of elasticity and continuity in the sound; the other performer giving the piano a voice, and making it sing out round, deep-chested notes in which there is no suggestion that the keys have been struck, but rather that the sound is being pressed out of the instrument. No satisfactory elucidation of the mystery of this difference of touch has been brought forward. The fact that so many and minute differences of touch and shades of expression—nay, more than this, that the individual *feelings* of performers can be transmitted to the piano through the keys, will give an idea of the exquisite nicety and complexity of the mechanism which makes this possible.

Possibilities.—There is no instrument which has greater possibilities than the piano. The rapid development of its technique, and the wonderful improvements that have followed in such quick succession during its comparatively short existence, all point to a more and more glorious future for it. The fact that from this instrument one performer can by himself produce the richest and most complete harmonies, and that he requires to devote so much intelligence and care to the study, in order to follow out simultaneously the many parts of these harmonies, instead of each part being taken by a different instrument—all this adds to its dignity and importance. On the name of Muzio Clementi rests the honor of having, in 1770, founded a technique for the piano.

History.—The piano, being a truly complex mech-

anism, has many so-called prototypes in antiquity. The two chief classes of keyed predecessors are: 1. The clavichord. This was a small instrument in which the strings were struck from below by metal tongues called tangents. While a key was held down, its tangent was pressed against the string near one extremity, thus forming one end of the vibrating part of the string. Swells and subsidences could be caused by increasing or diminishing the pressure on the key while it was held down. These changes were called the Bebung. The tone of the clavichord was infinitely sweet and delicate, and it is no wonder that Bach and others clung to it even after the invention of the piano. 2. The harpsichord, with its smaller varieties, the spinet and the virginal, or virginals. In the harpsichord the strings, two or three for each note, were plucked by quills carried on jacks that were pushed up when the keys were depressed. The harpsichord often had two manuals, or keyboards, and as many as six pedals. The latter, besides acting like those of the piano, included also some couplers, which could unite the two manuals or make a note sound its octave as well as itself. The damper pedal operated by moving some of the jacks until their quills could no longer pluck the strings. The harpsichord could give a greater variety of effects than the piano, but its tone was never so full or strong as that of the later instrument. The spinet was a very light harpsichord with one keyboard, and the virginal merely a box, with keyboard, which could be laid on a table. The mechanism of the two last-named instruments was similar to that of the harpsichord.

These instruments in turn were evolved from the

psaltery, an instrument having strings stretched horizontally over a soundboard, and plucked by plectra or quills. The harp supplied the idea of having a separate string for each note, and the harplike shape of the scaling; the monochord of the Greeks and the Middle Ages (by which name clavichords were called in France, Italy, and Spain at one time) supplied the idea of the bridges dividing the length of the strings; while the dulcimer and cembalo of the Arabs and Hungarians supplied the idea of the hammer-action.

The earliest mention of the name "pianoforte" applied to a keyed instrument seems to be in 1598, in the letters of a musical instrument maker named Paliarino, addressed to Alfonso II, Duke of Modena. It would seem, however, that the name was applied to some instrument of the clavichord or cembalo kind, for there is no mention of how the tone was produced, nor do we hear of the *piano e forte* again till 1711, in an account by Scipione Maffei, of Cristofori's "gravecembalo col piano e forte." Bartolommeo Cristofori was a harpsichord-maker, of Padua. Invited to Florence by Ferdinando de' Medici, and encouraged by him, Cristofori produced the first pianoforte, in which the two unison strings for each note were struck by hammers, and damped by pieces of cloth or felt; the check-action was added afterward. Others living at the same period claimed to be the real inventors—Schröter, of Dresden; Marius, of Paris; and Silbermann, of Freiberg. It is not impossible that the same idea may have occurred to more than one man quite independently. Cristofori was probably not the first who had attempted an instrument of this description; his invention was the result of years of study in his own

lifetime and that of preceding generations. It is now proved beyond contention, however, that Cristofori alone was the actual inventor. Johann Sebastian Bach had two pianos by Silbermann submitted to him in 1726, but his judgment was unfavorable; the treble was too weak, the touch too heavy. We hear, however, that he played on one bought by Frederick the Great in 1746. He stated then that he considered the instrument only fit for rondos and that class of music.

The first public mention of the pianoforte in England was in 1767, in a Covent Garden playbill, in Messrs. Broadwood's possession, in which it was announced as a new accompanying instrument. Pianos were imported into America soon after this.

The first real damper "loud" and soft pedals were adapted in 1783 by John Broadwood to the piano; they had been invented for the harpsichord, instead of hand-stops, by John Hayward, about 1670. At first the piano was looked upon as a variety of the harpsichord; its emancipation took place between 1770 and 1780, when it became an independent instrument, chiefly through the exertions of Muzio Clementi, who understood its capabilities. But it was Beethoven who first turned the tide from harpsichord, spinet, and clavichord to the acceptance of the piano.

In 1778 John Broadwood made a new scale grand, dividing the soundboard bridge. Stein, of Augsburg, invented the soft pedal with shifting action in 1789. Tension bars were first applied to a grand by James Broadwood tentatively in 1808, and in 1827 he patented a grand in which tension bars and string-plate were combined. In 1837 Jonas Chickering, of Boston, patented the first practical casting of a full iron frame to

resist the tremendous tension of the instrument. Other important improvements of this were patented by him in 1843 and 1845. Meanwhile the invention by Sébastien Erard in 1808 of the double escapement action had been perfected and was patented in 1821 by his nephew, Pierre Erard. The hammer-touch ultimately brought about a double improvement in playing and construction: (1) In using the wrist to soften the blow which the indifferent and thin wire strings were too weak to bear; (2) by giving the idea of using an iron frame to which to fasten the strings, as the wooden frame would not bear the increased tension of stronger and thicker strings.

Boehm, the flute-maker, was the first to have the idea of overstringing pianos in 1831, but the invention as applied to grands was patented by Steinway & Sons, in connection with a cast frame, in 1859.

In 1838 the harmonic bar was introduced by Pierre Erard. By making the treble part of the instrument almost immovable, it favored the production of the higher harmonics in the treble. The firm of Broadwood have since made use of a similar bar across the whole length of the wrest-plank. In 1847 Henry F. Broadwood invented a grand having an entire upper iron framing with only two tension bars. Pursuing this rejection of metal bars, Henry J. Tschudi Broadwood patented in 1888 a barless grand, which is now proved to stand the modern tension satisfactorily. It is in the reduction of weight that this invention will be valued in the future.

Innumerable other improvements have since been patented by Steinway & Sons, Mason & Hamlin, and many other firms of piano manufacturers; the soste-

nuto pedal, the agraffe, the supported soundboard, etc., are among these.

The harpsichord had a place in every orchestra till the end of the eighteenth century; the last great public performance at which it was used being that of Mozart's "Magic Flute," in 1791; after that time it was superseded by the pianoforte in the orchestra. Until about 1820 the director of the opera or concert sat at the piano, following from the score and occasionally joining in; the first violin or "leader" gave the tempi with his bow. Spohr was one of the first to break through this custom, when at a Philharmonic concert, in 1820, he boldly stood up with a baton, faced the orchestra with the score on the desk before him, and beat time regularly from beginning to end of the symphony. This method of conducting was found so successful that it was immediately adopted in England. But the baton was used on the Continent some years before this, as stated in the earlier part of this section.

The organ, which is a keyed wind instrument, is described under its own name.

II. THE ORGAN

THE organ (Gr. *organon,* an instrument) is an instrument provided with one or more keyboards, and generally a set of pedals, also a number of metal or wooden pipes which are made to sound, in performance, by wind (air) pressure from bellows or other source of compressed air. Space forbids a full description of all its mechanical devices. Large organs to-day usually have four divisions and manuals (hand

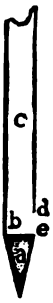
keyboards), besides the pedals. The manuals belong to the different departments of great organ, swell-organ, choir-organ, and solo-organ, the pedals forming the pedal organ. Each department is practically a separate instrument, but all are grouped so as to need but one performer. The manuals are arranged in an ascending row before him, and the pedals are placed at his feet. Many organs have three manuals, for choir, great, and swell organ, and a set of pedals. The compressed air from the bellows is conveyed through a wind-trunk to the wind-chest, each department having its own wind-chest. Attached to the top of the wind-chest is the upper board, arranged to control the entrance of the wind into the pipes. The pipes are set in the upper board, ranged in rows so that all pipes of the same pitch are in one line, while all of the same quality (register, stop) are in a line at right angles to the first line. Beneath the upper board are grooves, each running horizontally backward in a line from its corresponding key on the keyboard. When a key is pressed down, a valve (pallet) is opened, and the wind thus allowed to enter the groove of that key. This would cause all the pipes of that pitch to sound but for the intervention of another mechanism. There is another set of grooves, at right angles to the first, and each of these is a cross-slide, which the player can move to and fro at will by means of the draw-stops. When he pulls a stop out into the proper position for playing, he causes the cross-slide to move just enough so that certain holes in it will be brought opposite to the openings of the pipes. Thus the wind from the wind-chest, when allowed to enter the key-groove as the key is pressed down, cannot get into

any of the pipes of that pitch unless their cross-slides have been previously moved into position by means of the draw-stops. The pipes above each cross-slide, as previously noted, are of one quality, and are called a stop. Each department of the organ consists of a number of different stops, producing sounds that vary in quality.

The large and powerful pipes of the great organ are generally placed in front. Back of them are the smaller pipes of the choir-organ, less powerful and more suited to accompany voices. Above the latter is the swell-organ, the pipes of which are enclosed in a wooden box (swell-box), with a front of louver-boards like Venetian blinds, which may be made to open and shut by means of a pedal, and thus give crescendo and diminuendo effects. The pedal organ is sometimes placed behind the choir-organ, and sometimes half on each side. The compass of the manuals usually runs from great C (the C on the second line below the staff in the bass clef) to three-lined F (an octave above the upper line of the staff in the G clef). The pedal compass is usually from great C to one-lined F—about two octaves and a half. The keyboards regulate the compass of each stop, but do not limit the compass of the organ as a whole, as this depends only on the pitch of the pipes, which differs in different stops. For example, a stop, or set of pipes, giving notes of the pitch indicated by the keyboard, is said to give an 8-foot tone. This is because, sound traveling about 1100 feet a second, and great C having about 64 vibrations a second, and each vibration being twice the length of an open pipe, it takes an open pipe about eight feet long to sound great C. A pipe sixteen feet

long sounds an octave lower, so that a 16-foot tone is one that sounds an octave lower than played, while an 8-foot tone sounds as played. Similarly, a 4-foot tone is an octave above the key, a 2⅔-foot tone a twelfth above, and a 2-foot tone two octaves above. Large organs have all these, as well as one or more 32-foot stops, which sound two octaves below the key. Now even the 64-foot tone has been used, in the town organ at Sydney, Australia, the pipes giving a tone three octaves below the key. In its lowest octave, the 64-foot tone has so few vibrations that it is inaudible to the human ear. Other intervals besides these are used under the name of mixture. The mixture stop on a large organ consists of three or four ranks of small pipes, giving high, thin tones that are used to blend with the keynote and make it more brilliant. The term furniture is sometimes used, as well as mixture, furniture having more pipes.

Organ-pipes vary greatly in form and material, but are divided into two chief groups, flue-pipes and reed-pipes. Flue-pipes, having no reed mouthpiece, are further divided into stopped and open pipes. A section of an open pipe is shown in the figure. The letter *a* shows the foot of the pipe, *b* a flat plate called the language, and *c* the body of the pipe. The language does not extend wholly across the pipe, but stops just short of the opening *d-e*. When air is admitted through the foot of the pipe, it causes various flutterings at *d-e*, and those which have the proper rate of speed cause vibrations in the air-column of the pipe. The vibrations of a column of air consist of alternating compressions and rarefactions, acting much like pushes



and pulls given to a loosely coupled freight train. In an open pipe, the push, or puff, travels to the end and out, creating a slight pull, or suction, as it emerges. This suction travels back to the lower end of the pipe, where the flutterings start another puff. Meanwhile the first puff has been traveling onward, thus making the wave-length of the tone (i.e., the distance between successive puffs) twice the length of the body of the pipe. If the top of the pipe is closed with a plug, or tampion, each puff and suction has to travel up and down the tube before emerging into the air, thus making the wave-length four times the length of the pipe-body, and giving a tone an octave lower than that of an open pipe of the same size. As a tone of 16 vibrations a second is the lowest one audible to man, and sound travels a little over 1100 feet a second (say 1120), each wave-length of the tone would be 70 feet long, needing an open pipe with a 35-foot body. A longer body than this would give, not an audible tone, but a set of rhythmic puffs like whispers. As the number of vibrations is doubled to obtain the octave of a note, it follows that the wave-length and the length of the pipe must be halved. Intermediate lengths give the notes of the scale. Pipes are sometimes half-stopped, having a sort of chimney at the top. A reed-pipe derives its tone from the vibrations of a reed instead of air flutterings, though the reed itself is set in motion by air from the wind-chest. The reed is a small metal tube with its front cut away and a tongue or spring inserted, which will vibrate at the proper rate to produce the tone. If the tongue does not vibrate against the tube, the reed is called a free reed.

Organ-pipes differ in shape, proportion, or material, though the pipes in any one stop are much alike. Among the more important stops are the open and stopped diapason, so called because they run through the entire length of the manual; various kinds of instrumental or vocal stops, such as flute, posaune (trombone), English horn, basset horn, oboe, vox humana, viola, etc.; the mixture stops already mentioned, which reinforce a tone with faint, high overtones; and others, such as bourdon, dulciana, etc. It will be seen that registration, or the proper use and combination of stops in organ-playing, is a matter of paramount importance.

The largest organ on record was the one built for the St. Louis Exposition (1904). It had 140 stops, and 10,059 pipes. That of the Chicago Auditorium has 109 stops and 7124 pipes. The largest permanent organ on record at present is in the town hall at Sydney, Australia. This has 128 speaking stops (including carillon and thunder) and 8745 pipes. It has all the improvements of great modern organs—fourteen couplers, three balanced swell-pedals, three tremulants, thirty-three pneumatic combination studs, and six combination pedals. These studs and pedals are so arranged that each one throws in a special combination of stops. The couplers of an organ enable the player to sound one note in more than one department of the organ at the same time, or to sound the octave above or below with the note played. The Sydney organ has six divisions—great, swell, choir, solo, echo, and pedal. Among the larger pipes are a 32-foot contra-bourdon and several 16-foot bourdons and diapasons. The pedal organ includes four 32-foot stops, nine 16-

foot stops, one 10⅔-foot, and one 5⅓-foot, besides 8- and 4-foot stops and the great wooden contra-trombone (reed) at 64 feet. The great organ has 28 stops, the swell 25, the choir 20, the solo 21, the echo 8, and the pedal 26.

The ultimate origin of such grand instruments is to be sought in an antiquity almost prehistoric. The wind, sounding in the hole of a broken reed, first suggested to man the music of pipes. Soon he fashioned a set of these pipes, and mythology ascribed them to Pan. The next step was the use of one blow-hole in a primitive wind-chest below the pipes. The Romans invented hydraulic organs, in which the air was compressed by water-power. During the Middle Ages one organ at least used "heated water," possibly being run by steam-pressure. The Greeks and Romans used bellows also, with boys standing on them to cause the pressure. A relief showing such an organ was placed on an obelisk erected by Theodosius in 393 A.D. Pipes were then made of copper or bronze. Air was admitted by the drawing out of a rod at the base of the pipe. Organs became fairly common in Spain before 450 A.D.

About 666 A.D. Pope Vitalianus introduced the organ into the Church service. Organs were made in England in the eighth century. King Pepin introduced the instrument into France, obtaining an organ from the Byzantine Emperor. A copy of this was brought into Germany by Charlemagne, and the Germans soon became expert makers. For some centuries only the "full-organ" effect was possible, so it is not surprising to read that a lady in Charlemagne's court went crazy on hearing an organ. About 822 Charlemagne received

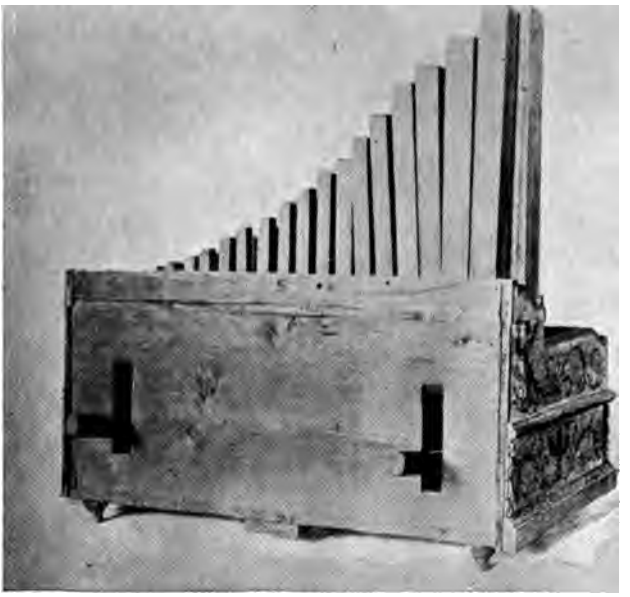
an organ of softer tone, sent by Calif Harun-al-Rashid.

The English monk Wulstan, who died in 963, left this description of the cathedral organ at Winchester: "Twice six bellows above are ranged in a row, and fourteen lie below. These, by alternate blasts, supply an immense quantity of wind, and are worked by seventy strong men, labouring with their arms, covered with perspiration, each inciting his companion to drive the wind up with all his strength, that the full-bosomed box may speak with its four hundred pipes, which the hand of the organist governs. . . . Two brethren [assistants] of concordant spirit sit at the instrument, and each manages his own alphabet [i.e., draw-rods marked with letters]. There are, moreover, hidden holes in the forty tongues and each has ten [holes with pipes above] in their due order. Some are conducted hither, some thither, each preserving the proper point for its note [i.e., the pipes were "conveyanced off," probably forming an ornamental front]. They strike the seven differences of joyous sounds, adding the music of the lyric semitone [i.e., diatonic scale with flat seventh added]. Like thunder the iron tones batter the ear, so that it may receive no sound but that alone." The fourteen bellows below and twice six above suggest our arrangement of great organ below and choir and echo above. The alphabet is mentioned because the rods and keys were marked with the letters of the scale. Each rod, or slide, opened ten pipes.

A treatise of the eleventh century, by a monk named Theophilus, states that the slide-box was made two and a half feet long and over a foot wide, and that the pipes were placed on its surface; that the compass consisted of seven or eight notes; that the playing-slides

were of equal width, and not made small for narrow pipes; that the organ was played by these slides, which were held by little side-slits; that there were two or more pipes to each note, which received air through holes of 1½ inch diameter in the slide; and that the instrument was played by pushing the slides in. This was the common type of early medieval organ. It was possible to make a small portable organ, afterward called the regals; and we find Monteverde using one as late as the seventeenth century. Stationary organs were called positive, and that term is sometimes used for one of the departments and manuals of modern French organs. The use of keys dates back to the eleventh century, when they took the primitive form of large levers. A spring-box was adopted with these, to restore the keys to their original position after they were played. These early keys were so large that the performer played them with his two fists, and if his hands grew sore he was allowed to use his elbows. The fall of the keys was often as much as a foot. Their size gradually diminished, but was kept large, to fit the pipes, until the fourteenth century. That century saw the introduction of a crude roller-board, transmitting the key-motion sidewise so that the pipe no longer had to be placed directly behind the key. The additional semitones of our scale were introduced at this time.

In 1350 a monk at Thorn, in Poland, made an organ having twenty-two keys. Eleven years later Nicholas Faber finished the famous Halberstadt organ, of the same compass. The latter is described by Prätorius. It was marked by a successful effort to modify the continuous "full-organ" effect, for it had three keyboards,



PORTABLE ORGAN

Italian, 17th century (?). Length, 1 ft. 10⅞ in.; height, 11 in.

two of which operated on certain pipes, and made them sound alone. Later, a sliding board was used to prevent certain pipes from sounding all the time. From this idea came the separate stops, worked out mechanically by the German Timotheus, who constructed a soundboard for an organ at Würzburg. The spring soundboard of this period had individual valves instead of cross-slides; but all the valves of a given set of pipes could be opened by a single stop. As the stop was drawn out, metal pins pushed the valves open. The stop was held open by being hooked to an iron bar. The wind was admitted to the valve-box by another valve, below, operated directly by the key. At this time the different stops were given names, mixture (sesquialtera) being included. All the pipes were open, cylindrical, and made of metal, but stopped pipes of wood soon came into use—gedackt, bourdon, kleingedackt, and other mellower registers. Tapering pipes (narrow on top) also were adopted, for gemshorn, etc., and spreading pipes, as in the dolcan; also reeds. By 1500 the keys had been so decreased in size that the octave had almost reached its present dimensions. Pedals were used at first merely to sustain the manual tone, but in 1418, or perhaps even earlier, they were provided with independent bass pipes. Traxdorff, of Mainz, and Bernhard, of Venice, are sometimes mentioned as inventors of the pedal, but they flourished fifty years later. Near the beginning of the sixteenth century the use of slides instead of springs was introduced. The pallets and springs in the wind-chest were kept, but that meant only one valve for each key, instead of one for each pipe. The stops could now be drawn out without undue effort.

A large organ was erected at Lübeck, between 1516 and 1518, which had two manuals and a set of pedals. It had 57 stops, some enclosed in a swell-box. There was a 32-foot principal for the pedals. This is the organ that Buxtehude used when Bach walked fifty miles to hear him. Two years before this (1703) Handel and Mattheson had come to try for the post of organist, which its incumbent wished to resign. But Buxtehude had made it a condition that his successor should marry his daughter, and the two young aspirants decided not to compete. The account does not specify whether they had seen the lady in question.

After the sixteenth century large organs became common. This was especially true in England, where the organ-builders have always shown great mechanical skill. During the Protectorate the Puritans opposed organs and scattered the makers. In the United States the Puritans of Boston, as late as 1713, refused the gift of an organ from Thomas Brattle. The instrument went to King's Chapel, and later to Newburyport and Portsmouth, N. H. It is still in existence in the latter city, and capable of use. Organs were made in America as early as 1745, when Edward Bromfield, Jr., copied an English model. After the Restoration in England, Bernhard Schmidt and Renatus Harris revived the industry of organ-building. From that time on there have been many improvements—in tracker and sticker mechanism, between the key and the wind-chest; in the invention of couplers; in the use of improved bellows, fans, and other devices for air-supply; in the applications of pneumatic and electric power, the latter offering many possibilities; in the adoption of combi-

nation studs and pedals; and in many other points depending on the progress of modern manufacturing. For the last five centuries or more, in fact since the use of two manuals at Halberstadt in 1361, the organ has deserved its title, "the king of instruments"; and the great modern organs are more than ever regal in their noble grandeur and infinite variety.

References:—The best work to present all the most modern applications of electricity to the organ, and all the recent devices of couplers, combinations, etc., is "The Art of Organ-building," by George Ashdown Audsley, a large treatise in two volumes. For the fundamental points of organ structure (minus the most modern improvements) Hopkins and Rimbault's "The Organ, its History and Construction," also a large work, may be commended. Other works are: Dickson, "Practical Organ-building"; Elliston, "Organs and Tuning"; Hinton, "Facts About Organs"; Locher, "An Explanation of Organ Stops"; Rimbault, "The Early English Organ-builders and Their Works"; Robertson, "A Practical Treatise on Organ-building," a large and important work in two volumes, and embracing modern details.

From these and similar works that have been published the student of this noble instrument will be able to inform himself fully regarding its history, which will yield him pleasure as well as instruction.

III. INSTRUMENTS OF THE LUTE CLASS

AS the parent of instruments whose strings are plucked or struck with the fingers, the lute, though now obsolete, holds an important place in musical history. Three centuries ago it was almost as popular in Europe as is the pianoforte everywhere to-day.

The lute is represented in Egyptian sculptures, and Egypt, therefore, must have been one of its early homes. It anciently became a favorite instrument of the Arabians, and its introduction into Europe followed the Saracen conquests in Spain. The Arabian lute was made of twenty-one pieces of maple-wood, with a flat face, a round back, and three rosettes in the face. The strings were eight in number and were tuned in pairs.

The European lute also had originally eight strings, and the number was not increased for many centuries. At first the strings, of thin catgut, were arranged in four pairs, each pair being tuned in unison, so that its open strings produced four tones. Until the sixteenth century twelve (six pairs) was the largest number of strings. Eleven appears for some centuries to have been the most usual number. These produced six tones, since they were arranged in five pairs and a single string. The latter, called the chanterelle, was the highest.

According to Thomas Mace, the English lute in common use during the seventeenth century had twenty-four strings, arranged in twelve pairs, of which six pairs ran over the fingerboard and the other six by the side of it.

The neck of the lute had frets consisting of catgut strings tightly fastened round it at the proper distances required for insuring a chromatic succession of intervals. The order of tones adopted for the open strings varied in different centuries and countries; and this was also the case with the notation of lute music, which was called tablature. The most common practice was to write the music on six lines, the upper line representing the first string; the second line, the second string, etc.; and to mark with letters on the lines the frets at which the fingers ought to be placed—*a* indicating the open string, *b* the first fret, *c* the second fret, etc. Sometimes figures were used instead of letters.

The lute was made of various sizes, according to the purpose for which it was intended in performance. The chitarrone, or bass lute, was the largest form of the instrument, and was used in Italian orchestras. Some specimens still preserved are more than six feet in height. Often lutes were elaborately wrought and beautifully decorated. They were equally in favor in private hands and in early orchestral combinations. Beginning with the eighteenth century, the lute was gradually superseded in general use by the clavichord and in the orchestra by the violin. Its existing relatives are the mandolin, the guitar, and the banjo, each of which we will briefly describe.

THE MANDOLIN

This instrument has a fretted fingerboard and from four to six single or double metallic strings. These are stretched over an almond-shaped body. The mandolin is tuned like the violin, and is played with a

plectrum. The body of the instrument is formed of a number of narrow pieces of different kinds of wood, bent into the shape and glued together. On the open portion of the body is fixed the soundboard, with a fingerboard and neck like a guitar.

Formerly in Italy there were various kinds of mandolins, of which the most common were the Neapolitan and the Milanese. The Neapolitan had eight strings, constituting four pairs. They were tuned (beginning with the lowest) G, D, A, E. The Milanese had usually ten strings, constituting five pairs. They were tuned G, C, A, D, E. In Spain the mandolin has six double strings. The Turks have a mandolin with seven double strings.

Of the surviving forms of this instrument, the Neapolitan is most in use to-day. Its range is about three octaves upward from the G next below middle C. While the strings are struck by a plectrum held in the right hand, the fingers of the left hand regulate the notes as on a violin. Although rather tinkling, the tone is penetrating, agreeable, and sympathetic. Among instruments of the pizzicato class the mandolin is well suited to the production of melody. By rapid repetition of the note a good sostenuto is obtained, the repeated notes, if performed with sufficient speed and equality, conveying the effect of a sustained sound. While it has never become an orchestral instrument, the mandolin has been employed sometimes by operatic composers for procuring characteristic effects. Mozart used it to good purpose in "Don Giovanni," and Beethoven wrote a sonatina for it. Handel also employed it in his oratorio "Alexander Balus," as likewise did Paisiello in his "Barber of Seville."

THE GUITAR

The guitar now in general use is the Spanish. It belongs to the family of lutes and zithers, of which it is now the most important representative. The name is inherited from the Greek κιθαρα, though the instrument is not the same. The guitar is really of Arabian origin, and was introduced into Spain by the Moors. It spread into Italy and France in the sixteenth century, in a five-stringed form. The six-stringed form, now in use, was invented by a German named Cetto, about 1790. The real Spanish guitar was introduced into England after the Peninsular War by Ferdinand Sor, a Spaniard, who composed for it. The guitar soon became so popular in England that it seemed about to displace the Erard harp; but Erard distributed guitars among the working classes, so that the aristocracy would consider the instrument too plebeian, and keep to the harp.

The guitar has a flat front and back. There is a large sound-hole in front. The sides are curved almost like those of a violin, and some have thought from this that the guitar was originally played with a bow. But the shape varied a good deal. The sound-board, or front, is usually pine, while maple, ash, or cherry serves for the other parts of the sound-box. The neck and fingerboard are made of hard wood, and the bridge, at the other end of the strings, is generally ebony and metal. The three upper strings are catgut, the other three being made of silk wound with fine wire. They are tuned in fourths and thirds, giving the written notes E, A, D, G, B, and E in ascending order, beginning with the E below middle C; but

sounding an octave lower than written. The Spanish instrument had ebony pegs for tuning, but metal screws are now used. The fingerboard is provided with frets to mark the intervals. The instrument can be transposed a semitone downward by means of a nut called the capo tasto. It is thus made ready for use in flat keys. The old instruments often had extra strings, duplicating the pitch of the others. The guitar is never played with a plectrum, but always by the fingers. The little finger rests on the soundboard during performance, in a spot so chosen that the thumb can sound the deepest strings.

On the famous "Gate of Glory," made by Mateo in 1188 for the church of St. Jago of Compostella (Spain) is a relief of an early guitar, or vihuela. A hundred years later, in the time of the troubadours, there were several kinds of vihuela, some played with bow or plectrum. In modern times there has been a Terz-guitarre, a minor third higher than usual. Giuliani wrote a concerto for this, with band, which was published by Diabelli and transcribed for the piano by Hummel. The popular Portuguese machête, or octave guitar, has four strings, tuned to the D, G, B, and D running up from middle C, or sometimes D, G, B, and E. In Madeira, after the work in the vineyards is finished, the workers enliven their homeward journey with this instrument.

The chief composers for the guitar, besides Sor and Giuliani, have been Legnani, Kreutzer, Nüske, Regondi, and Leonard Schulz. Hiller's impromptu "Zur Guitarre" imitates the style of that instrument on the piano. The guitar was the only instrument that Berlioz could play. Paganini was very fond of it, and at

one time gave up the violin in its favor. Recently some quartets of his have been discovered, for violin, viola, cello, and guitar. The guitar is well adapted to accompany the voice, and composers have used it for this purpose in opera. In Rossini's "Barber of Seville" it was employed in Almaviva's serenade. But it is too light for orchestral purposes. Schumann thought of using it for the accompaniment of the Romanza in his D minor symphony, but gave up the idea and used the pizzicato tones of violins instead. These tones give an excellent guitar effect in the Barcarolle of Offenbach's "Contes d'Hoffmann" and in the song in the prelude to Mascagni's "Cavalleria Rusticana." The guitar is eminently pleasing as a solo instrument, and the dreamy melancholy of its tone-color gives it a real charm. Notwithstanding the various modifications that have been made in it, the instrument remains but slightly changed.

THE BANJO

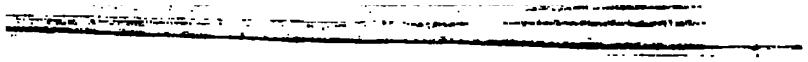
The word banjo is probably a corruption of bandore, or pandore, an instrument attributed to the god Pan. The banjo is a stringed instrument with a flattish circular body and a long neck. The body is like a very flat drum with only one covering, a thin sheet of parchment stretched tightly over a hoop to give the desired resonance. The banjo is played by the fingers, its strings being plucked. It has no frets to guide the performer. Banjos usually have five strings, though large ones exist with six, seven, or even nine, the deeper strings being covered with wire. The chanterelle, or melody-string, is called the thumb-string, because it is

not set in the order of the other strings, but set below the bass.' In performance the neck is held in the left hand and the body rests on the player's knees, bringing the chanterelle on the inside, and consequently under the right thumb. The peg for this string is placed about halfway up the neck. The other strings are usually twenty-four inches long, the chanterelle sixteen. The ordinary five-stringed banjo is tuned to A, E, G sharp, B, and E, running up as written from the A just below middle C (small A). The thumb-string is the highest. The lowest string is sometimes tuned to G, a tone lower. The six-stringed instrument is tuned up as written from the same G, its tones being G, D, G, B, D, and G in ascending order. The seven-stringed instrument adds middle C to this series. The nine-stringed banjo has two extra chanterelles, giving the semitones above and below the highest G mentioned.

Like the guitar, the banjo sounds an octave lower than the written notes would indicate. Sometimes, in playing, the first finger of the left hand is placed across all the strings, thus transposing the instrument, and serving the purpose of a nut, or capo tasto. This is called the barre.

Crude instruments of the banjo type exist among many savage tribes. (See Wallaschek, "Primitive Music.") Almost any string stretched over a long frame would lead to some banjo-like instruments. In Senegambia the negroes make and use an instrument called the bania, which Engel ("Musical Instruments") suggests as a possible origin of the American banjo. This and other instruments may have come from a more civilized country like Arabia, through the me-

dium of traders; but there are so many crude banjos among the Africans that a native origin is certain also. The banjo is too twangy in effect for orchestral use. It does not sustain the tones long, hence lively and rapid music is especially suited to it. Gottschalk's "Banjo" gives an excellent illustration of the style transferred to the piano. The banjo repertoire is wholly light and popular in character.



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